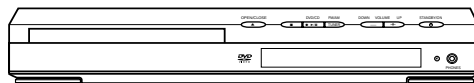


Service Manual



ORDER NO.
RRV2653

DVD / CD RECEIVER

XV-DV303

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Region No.	Remarks
	XV-DV303			
MYXJN	○	AC220-230V	2	
NVXJN	○	AC230V	2	



For details, refer to "Important symbols for good services" on the next page.

SAFETY INFORMATION



This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING !

THE AEL (ACCESSIBLE EMISSION LEVEL) OF THE LASER POWER OUTPUT IS LESS THAN CLASS 1 BUT THE LASER COMPONENT IS CAPABLE OF EMITTING RADIATION EXCEEDING THE LIMIT FOR CLASS 1.
A SPECIALLY INSTRUCTED PERSON SHOULD DO SERVICING OPERATION OF THE APPARATUS.

LASER DIODE CHARACTERISTICS

FOR DVD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 650 nm
FOR CD : MAXIMUM OUTPUT POWER : 5 mW
WAVELENGTH : 780 nm

CAUTION : VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VORSICHT : SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHLE AUSSETZEN!
ADVARSEL : SYNLIS OG USYNLIS LASERSTRÅLING VED ÅBNING UNDGA UDSÆTTELSE FOR STRÅLING.
VARNING : SYNLIS OCH OSYNLIS LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRÄKTA EJ STRÅLEN.
VARO! : AVATTIENNA ALTIIDUT NÄKYMÄ JA NÄKYMÄTTÖMÄLLE LASERISÄTELE YLLÄ ÄLÄ KATSO SILTIIHIN.
CUIDADO : RADIACIÓN LÁSER VISIBLE E INVISIBLE AL ESTAR ABIERTO. EVITAR EXPOSICIÓN AL RAYO.

VRW1872

VRW1872

Additional Laser Caution

1. Laser Interlock Mechanism

- Loading switch (S101 on the LOAB Assy) is used for interlock mechanism of the laser.
When this switch turned ON in SW2 (XCLOSE) side (OPEN signal is 0V and XCLOSE signal is 3.5V), a laser becomes the status which can completely oscillate.
Furthermore, the laser completely oscillates in the disc judgment and disc playback.
When player is power ON state and laser diode is not completely oscillating, 780nm laser diode is always oscillating by half power.
- Laser diode is driving with Q101 (650nm LD) and Q102 (780nm LD) on the DVDM Assy.
Therefore, when short-circuit between the emitter and collector of these transistors or the base voltage is supplied for transistors turn on, the laser oscillates. (failure mode)
- In the test mode *, there is the mode that the laser oscillates except for the disc judgment and playback. LD ON mode in the test mode oscillates with the laser forcibly.
The interlock mechanism mentioned above becomes invalid in this mode.

- When the cover is open, close viewing through the objective lens with the naked eye will cause exposure to the laser beam.

* : See page 78.

CLASS 1
LASER PRODUCT

[Important symbols for good services]

In this manual, the symbols shown-below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.

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1. SPECIFICATIONS

Amplifier section

Continuous Power Output (RMS):

Front, center, surround ... 75 W per channel
(1 kHz, 10 % T.H.D., 6 Ω)

Subwoofer 75 W (100 Hz, 10 % T.H.D., 6 Ω)

Continuous Power Output :

Front, center, surround ... 62 W per channel
(1 kHz, 1 % T.H.D., 6 Ω)

Subwoofer . 62 W (100 Hz, 1 % T.H.D., 6 Ω)

Disc section

Digital audio

characteristics DVD fs: 96 kHz, 24-bit

Type DVD system, video CD system and
compact disc digital audio system

Frequency response 4 Hz to 44 kHz

FM tuner section

Frequency range 87.5 – 108 MHz

Antenna 75 Ω , unbalanced

AM tuner section

Frequency range

With 9 kHz step 531 kHz to 1,602 kHz

With 10 kHz step 530 kHz to 1,700 kHz
(not applicable to European model)

Antenna Loop antenna

Miscellaneous

Power requirements

European model .. AC 220–230 V, 50/60 Hz

Power consumption

European model 195 W

Power consumption in standby

European model 0.39 W

Dimensions ... 360 (W) x 70 (H) x 393 (D) mm/

14-3/16 (W) x 2-3/4 (H) x 15-1/2 (D) in.

Weight 7.0 kg/15 lb 7 oz

Accessories (DVD/CD receiver)

Remote control 1

AA/R6P dry cell batteries 2

Video cable (yellow plugs) 1

AM loop antenna 1

FM antenna 1

Power cord 1

Warranty Card 1

Operating instructions

Quick setup guide

Speaker System

Front and surround speakers

Enclosure Closed-box bookshelf type
(magnetically shielded)

System 8.7 cm 1-way system

Speakers 8.7 cm cone type

Nominal impedance 6 Ω

Frequency range 100 Hz to 20 kHz

Maximum Input Power 75 W

Dimensions ... 110 (W) x 155 (H) x 76 (D) mm/
4-5/16 (W) x 6-1/8 (H) x 3 (D) in.

Weight 0.75 kg/1 lb 10 oz

Center speaker

Enclosure Closed-box bookshelf type
(magnetically shielded)

System 8.7 cm 1-way system

Speakers 8.7 cm cone type

Nominal impedance 6 Ω

Frequency range 100 Hz to 20 kHz

Maximum Input Power 75 W

Dimensions ... 200 (W) x 110 (H) x 76 (D) mm/
7-7/8 (W) x 4-5/16 (H) x 3 (D) in.

Weight 0.8 kg/1 lb 12 oz

Subwoofer

Enclosure Bass-reflex floor type
(magnetically shielded)

System 16 cm 1-way system

Speaker 16 cm cone type

Nominal impedance 6 Ω

Frequency range 30 Hz to 2.8 kHz

Maximum Input Power 75 W

Dimensions . 130 (W) x 360 (H) x 360 (D) mm/
5-1/8 (W) x 14-3/16 (H) x 14-3/16 (D) in.

Weight 4.0 kg/8 lb 13 oz

Accessories (Speaker system)

Speaker cords 6

Non-slip pads 24

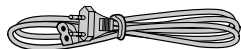


Note

- Specifications and design subject to possible modification without notice, due to improvements.

Accessories

- Power cord (MYXJN : ADG1154)



- FM Antenna (ADH7030)



- Video Cord (L = 1.5m)(VDE1053)

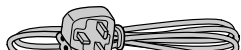


Yellow

- Remote Control Unit (AXD7337)



- Power cord (NVXJN : ADG1156)



- AM Loop Antenna (ATB7009)



- Dry Cell Battery (R6P, AA)



2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

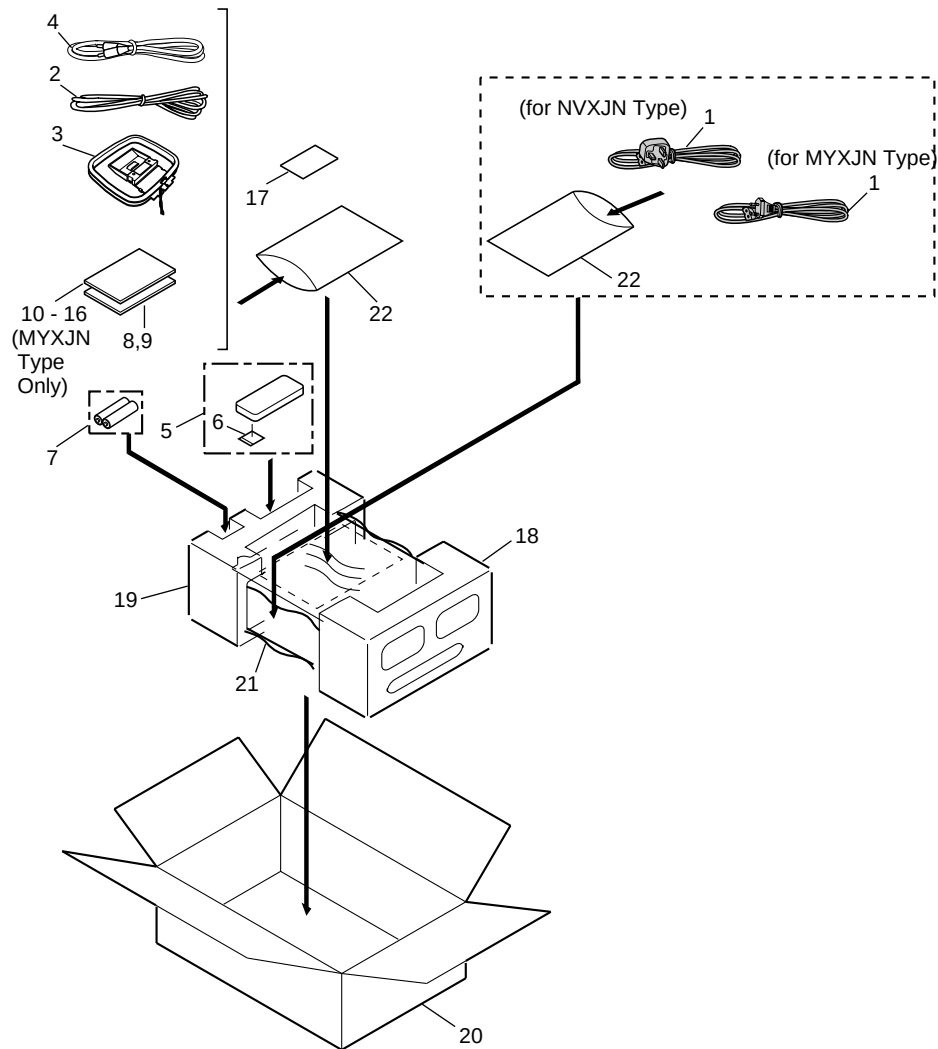
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

● Screws adjacent to ▼ mark on product are used for disassembly.

● For the applying amount of lubricants or glue, follow the instructions in this manual.

(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



● PACKING PARTS LIST

(1) PACKING PARTS LIST

Mark	No.	Description	Part No.
NSP	1	AC Power Code	See Contrast table (2)
	2	FM Wire Antenna	ADH7030
	3	AM Loop Antenna	ATB7009
	4	Video Code(L=1.5m)	VDE1053
	5	Remote Control	AXD7337
	6	Battery Cover	AZA7424
	7	Dry Cell Batteries(R6P,AA)	VEM1031
	8	Operating Instructions(English)	ARB7271
	9	Operating Instructions Basic (English, French)	ARE7301
	10	Operating Instructions Basic (German,Italian)	See Contrast table (2)
	11	Operating Instructions(German)	See Contrast table (2)
	12	Operating Instructions Basic (Dutch,Spanish)	See Contrast table (2)
	13	Operating Instructions(Dutch)	See Contrast table (2)
	14	Operating Instructions(French)	See Contrast table (2)
	15	Operating Instructions(Italian)	See Contrast table (2)
	16	Operating Instructions(Spanish)	See Contrast table (2)
	17	Warranty Card	ARY7022
	18	Pad F	AHA7387
	19	Pad R	AHA7388
	20	Packing Case	AHD8074
	21	Packing Sheet	AHG7102
	22	Polyethylene Bag	Z21-038

(2) CONTRAST TABLE

XV-DV303/MYXJN and /NVXJN types are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			XV-DV303/MYXJN	XV-DV303/NVXJN	
⚠	1	AC Power Code	ADG1154	ADG1156	
	10	Operating Instructions Basic (German,Italian)	ARC7406	Not used	
	11	Operating Instructions (German)	ARC7407	Not used	
	12	Operating Instructions Basic (Dutch,Spanish)	ARC7408	Not used	
	13	Operating Instructions(Dutch)	ARC7409	Not used	
	14	Operating Instructions(French)	ARC7436	Not used	
	15	Operating Instructions(Italian)	ARC7437	Not used	
	16	Operating Instructions(Spanish)	ARC7438	Not used	

2.2 EXTERIOR SECTION

A

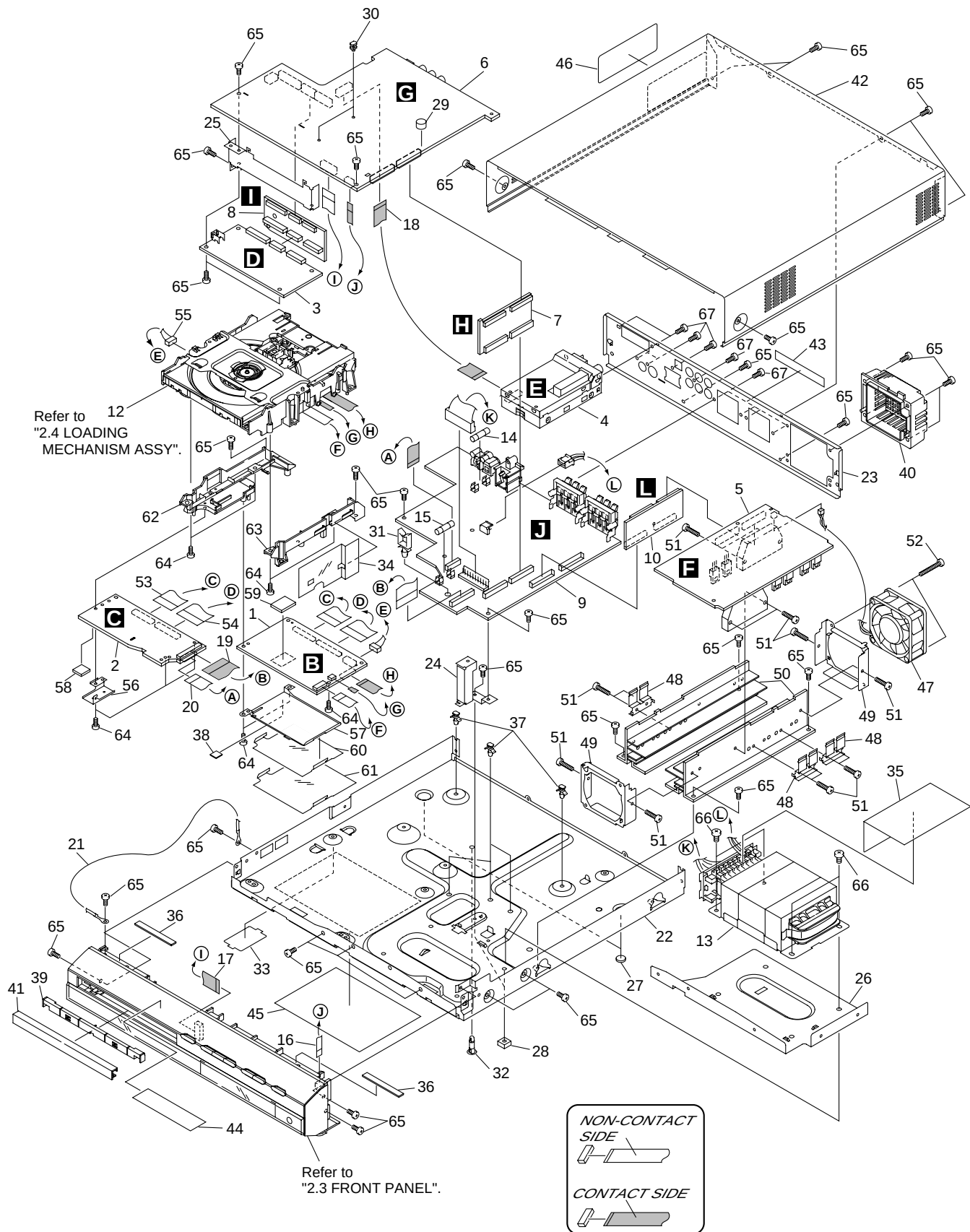
B

C

D

E

F



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	DVDM ASSY	AWM7750	36	Spacer	AEC7454
2	DVD IF ASSY	AWM7677	37	Card Spacer	DEC1772
3	DSP ASSY	AWX8059	38	Spacer	XEC3006
4	FM/AM TUNER MODULE	AXQ7229	39	Tray Mold	AAK8013
5	AMP ASSY	AWM7720	40	FAN Cover	AMR7440
6	CONTROL ASSY	AWU8038	41	AL Tray Panel	AAK8014
7	TRADE2 ASSY	AWU8043	42	Bonnet	AZN7910
8	TRADE3 ASSY	AWU8044	43	Terminal Sheet	AAK8040
9	POWER ASSY	AWU8031	44	Getter Label DCS2	AAX7920
10	TRADE1 ASSY	AWU8036	45	Name Sheet	AAX7927
11	•••••		46	Caution Label	VRW1872
NSP 12	Loading Mechanism Assy	VWT1188	47	DC FAN Motor	AXM7025
⚠ 13	Power Transformer (T1)	ATS7332	48	FET Bracket A	ANG7418
⚠ 14	Fuse (FU1 : T2.5A)	REK1026	49	FAN Plate	ANG7425
⚠ 15	Fuse (FU2 : T5.0A)	REK1029	NSP 50	Heat Sink	ANH7161
16	5P FFC/30V	ADD7378	51	Screw	BBZ30P140FMC
17	13P FFC/60V	ADD7379	52	Screw	BBZ30P300FZK
18	13P FFC/30V	ADD7380	53	26P FFC/60V	ADD7372
19	30P FFC/30V	ADD7381	54	30P FFC/60V	ADD7373
20	16P FFC/30V	ADD7382	55	Connector Assy	PG05KK-E25
NSP 21	Earth Lead	DE005VF0	56	Heat Plate	ANG7426
NSP 22	Chassis	ANA7145	57	Shield Case	ANK7108
23	Rear Panel	See Contrast table (2)	58	Radiation Sheet	AEB7255
24	Angle DCS2	ANG7423	59	Cushion	AEB7267
25	Angle DSP	ANG7424	60	FFC Spacer	AEC7442
26	Trans Frame	ANG7427	61	FFC Barrier	AEC7443
27	Leg	AEB7090	62	Adapter02 L	ANW7247
28	S Cover (Rub)	AEB7262	63	Adapter02 R	ANW7248
29	C Spacer (Rub)	AEB7276	64	Screw	PPZ30P080FMC
NSP 30	PCB Spacer	AEC7156	65	Screw	BBZ30P080FNI
31	Wire Saddle	AEC7297	66	Screw	BBZ40P060FMC
32	Locking Card Spacer	AEC7372	67	Screw	BPZ30P100FZK
33	Bottom Plate	AEC7420			
34	Barrier S	AEC7429			
35	Barrier	AEC7453			

(2) CONTRAST TABLE

XV-DV303/MYXJN and /NVXJN types are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			XV-DV303/MYXJN	XV-DV303/NVXJN	
	23	Rear Panel	ANC8096	ANC8122	

2.3 FRONT SECTION

A

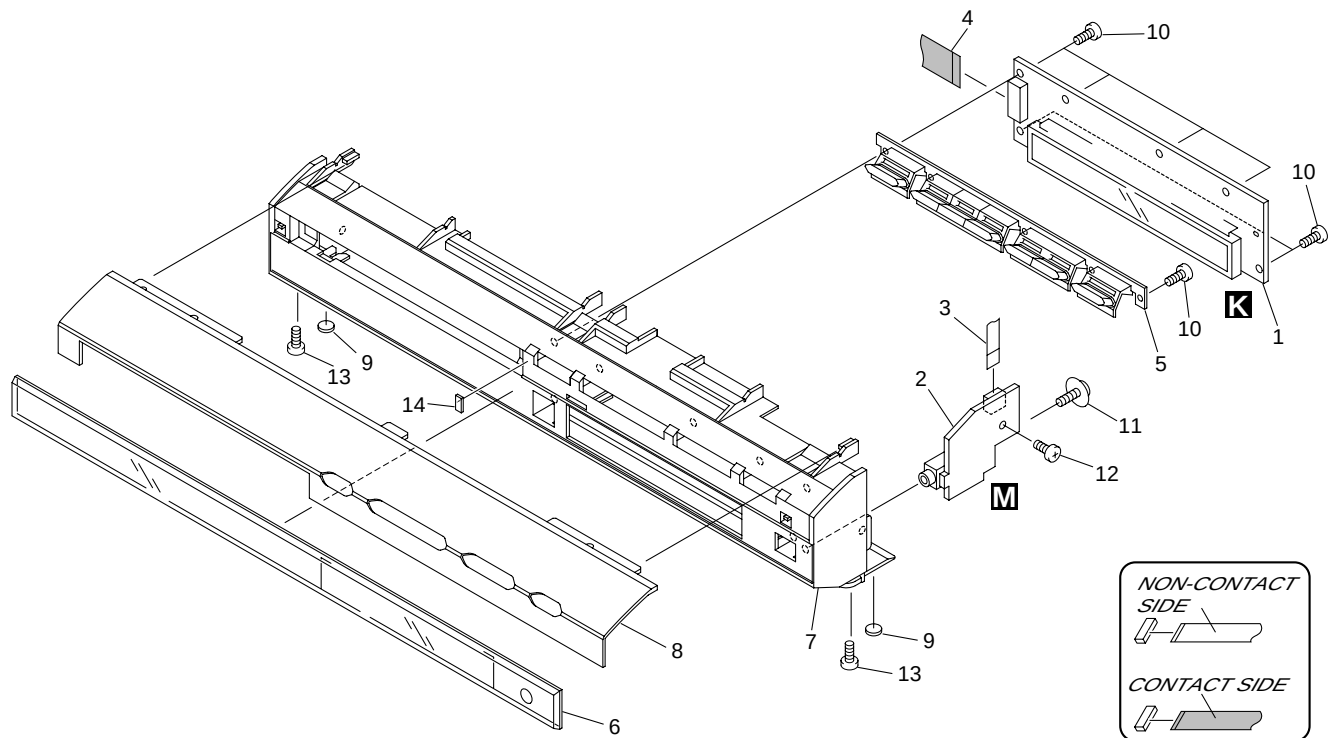
B

C

D

E

F



● FRONT SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	DISPLAY ASSY	AWU8035
2	HP ASSY	AWU8037
3	5P FFC/30V	ADD7378
4	13P FFC/60V	ADD7379
5	Button DCS2	AAD7685
6	Display Window	AAK8015
7	Front Panel	AMB7824
8	AL Panel	ANB7310
9	Leg	AEB7090
10	Screw	BPZ30P100FZK
11	Screw	ABA1005
12	Screw	BBZ30P080FNI
13	Screw	CBZ30P080FMC
14	Spacer	AEC7456

A

B

C

D

E

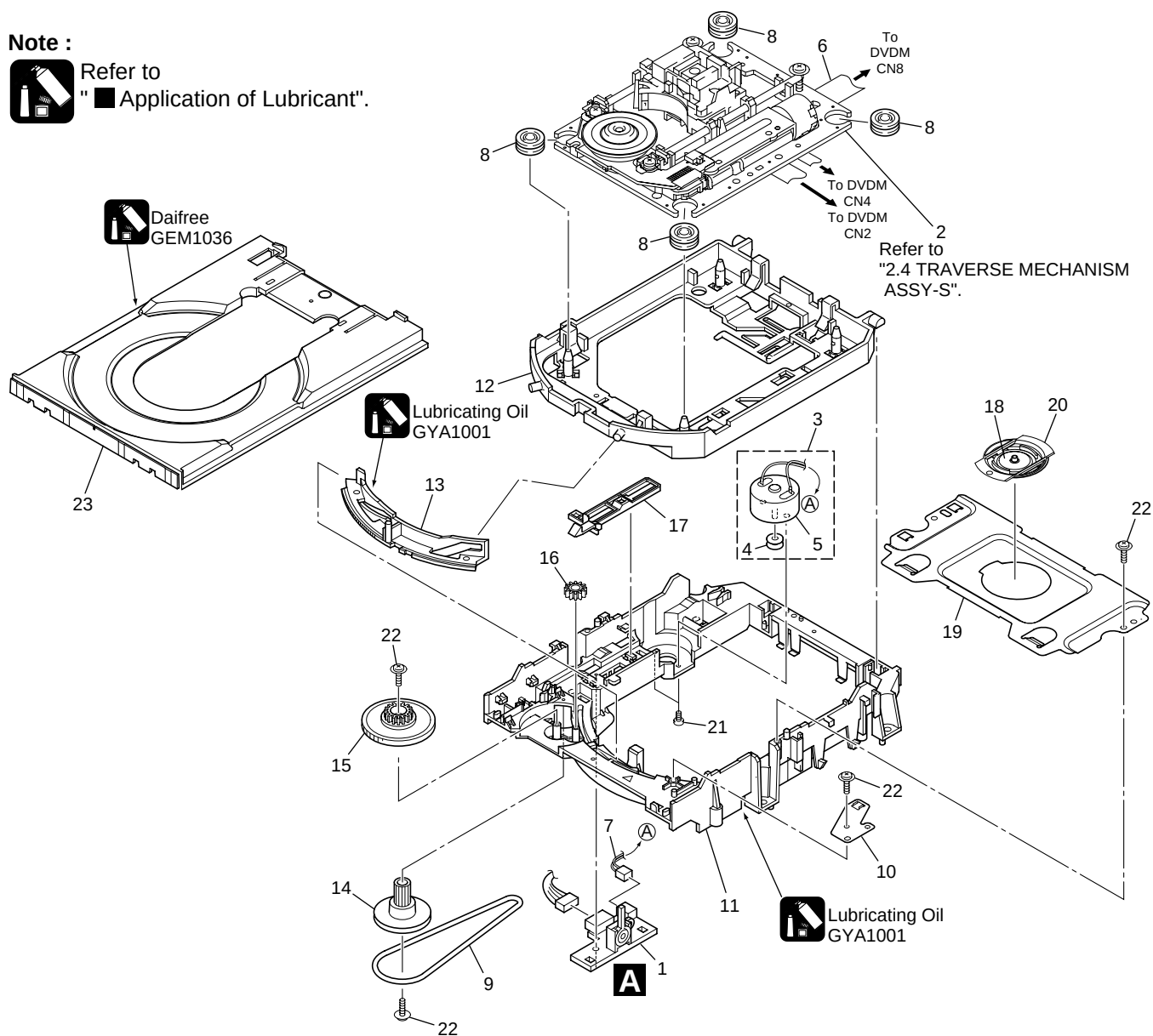
F

2.4 LOADING MECHANISM ASY

Note :



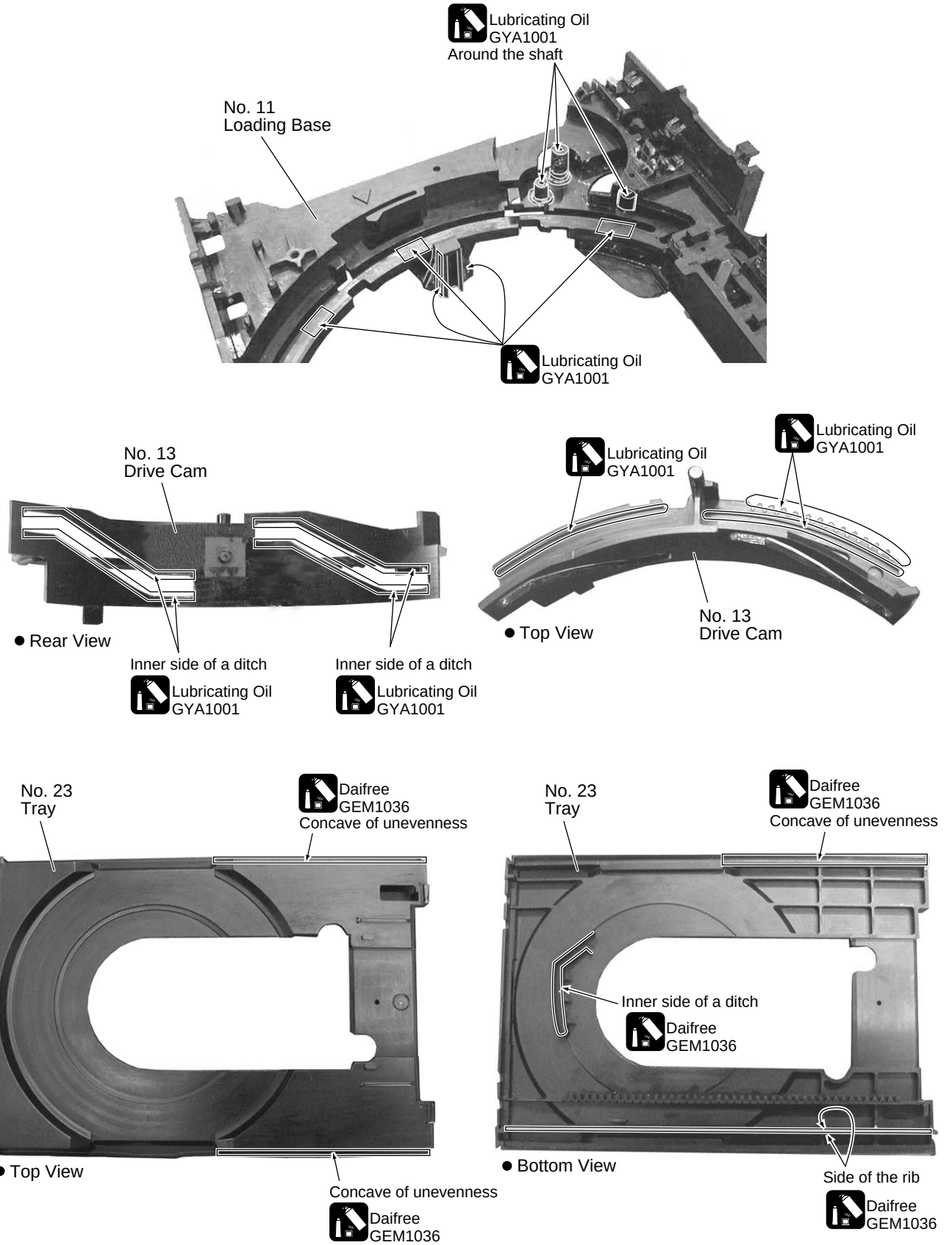
Refer to
"Application of Lubricant".



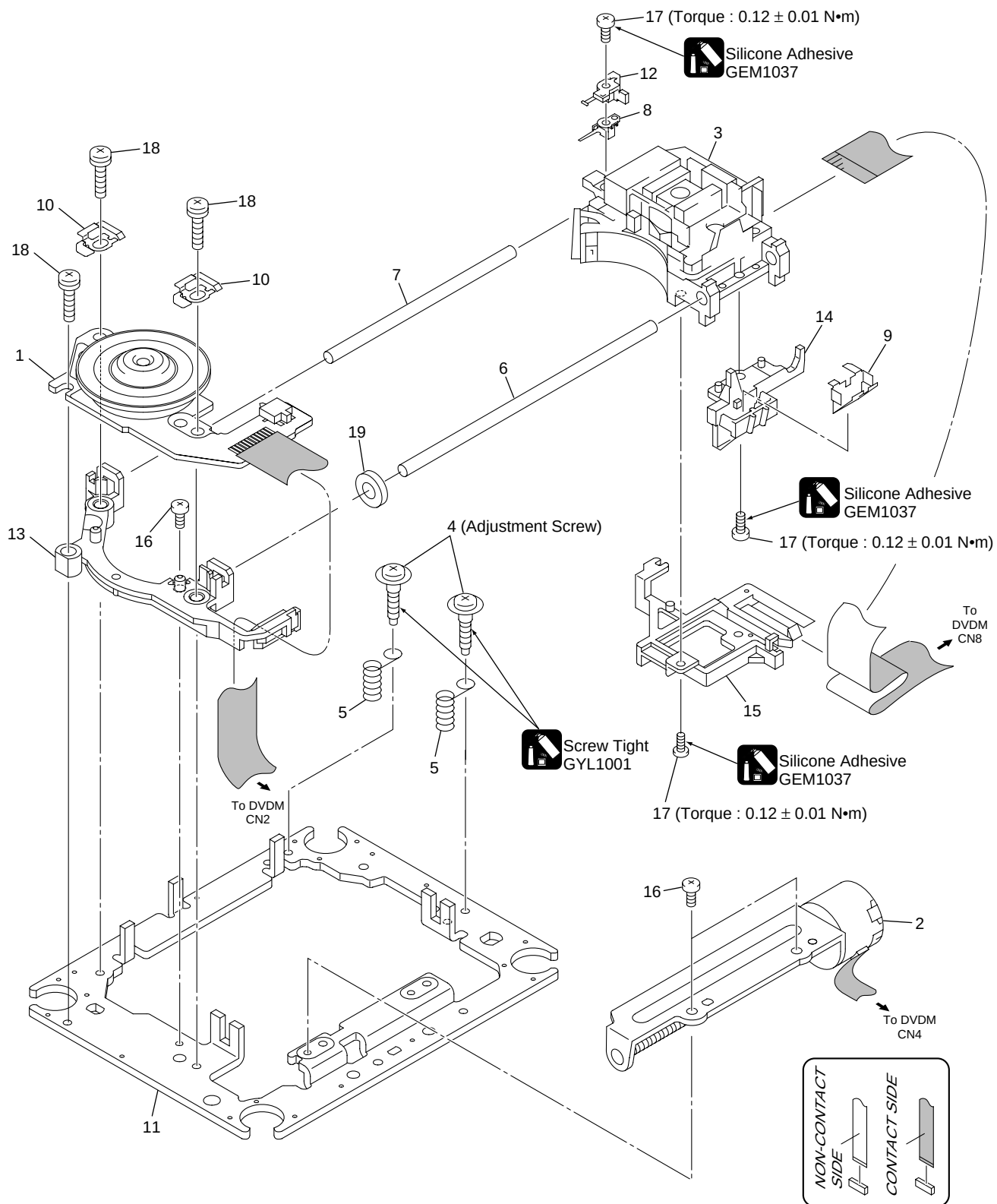
● LOADING MECHA ASSY PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	LOAB Assy	VWG2279	16	Drive Gear	VNL1923	
	2	Traverse Mechanism Assy-S	VXX2782	17	SW Lever	VNL1925	
E	3	Loading Motor Assy	VXX2505	18	Clamper Plate	VNE2251	
	4	Motor Pulley	PNW1634	19	Bridge	VNE2252	
	5	Carriage DC Motor / 0.3W	PXM1027	20	Clamper	VNL1924	
	6	Flexible Cable (26P)	VDA1864	21	Screw	JGZ17P028FMC	
	7	Connector Assy 2P	VKP2253	22	Screw	Z39-019	
	8	Float Rubber	VEB1327	23	Tray	VNL1920	
	9	Belt	VEB1330				
	10	Stabilizer	VNE2253				
	11	Loading Base	VNL1917				
	12	Float Base DVD	VNL1918				
F	13	Drive Cam	VNL1919				
	14	Gear Pulley	VNL1921				
	15	Loading Gear	VNL1922				

Application of Lubricant



2.5 TRAVERSE MECHANISM ASSY-S

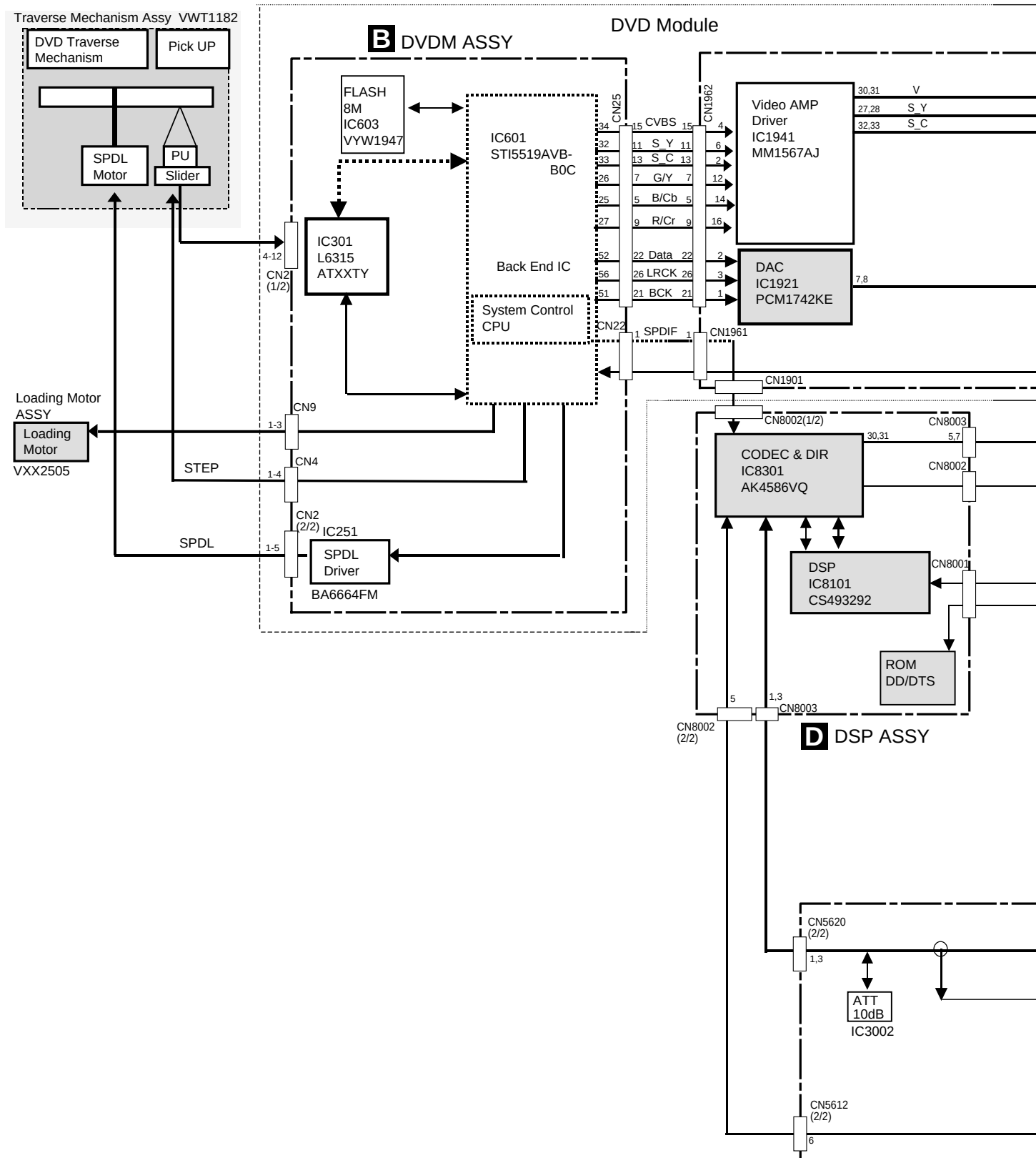


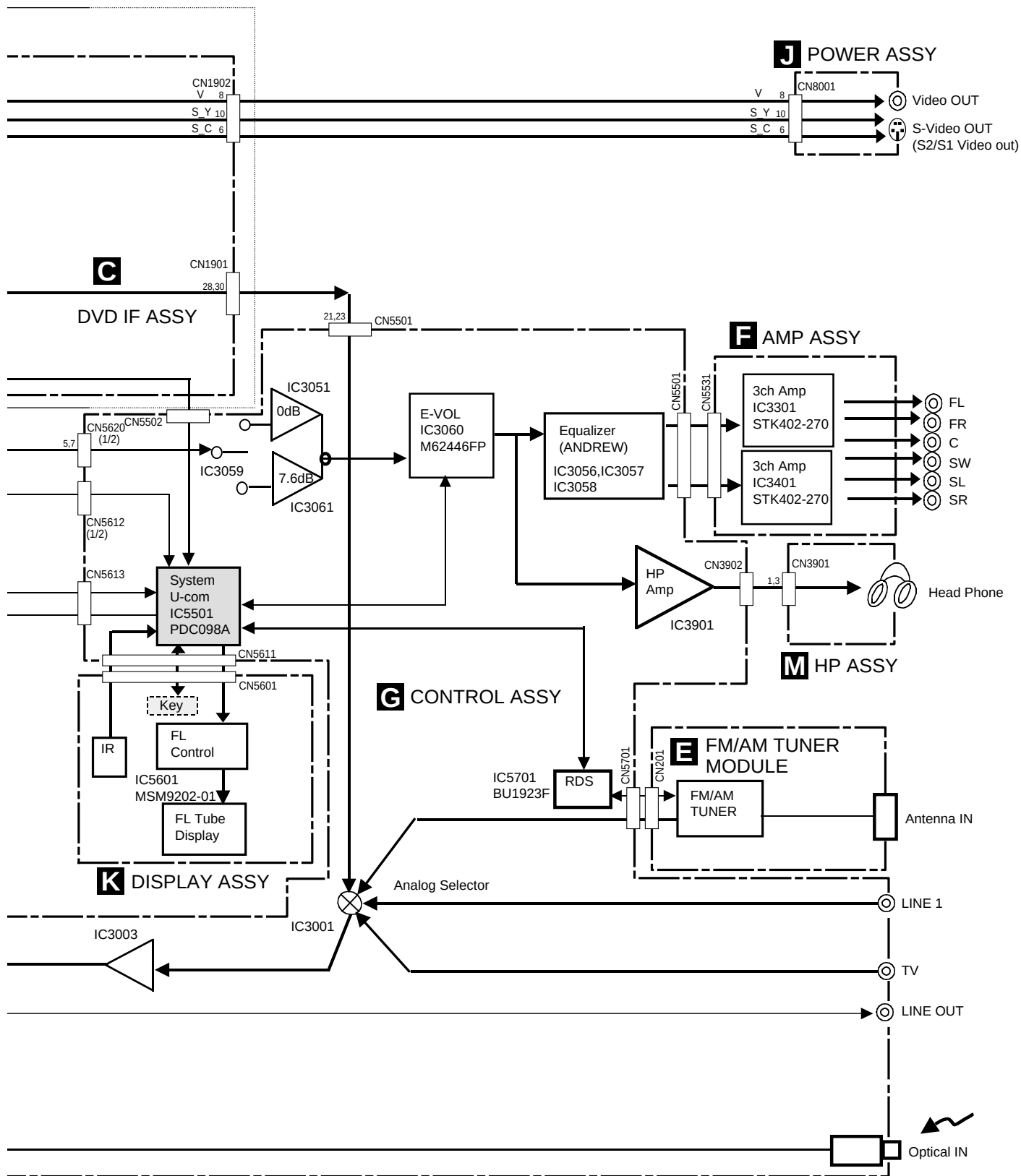
● TRAVERSE MECHANISM ASSY-S PARTS LIST

<u>Mark</u>	<u>No.</u>	<u>Description</u>	<u>Part No.</u>
	1	Spindle Motor	VXM1089
	2	Stepping Motor	VXM1090
⚠	3	Pickup Assy-S	OXX8003
	4	Skew Screw	VBA1080
	5	Skew Spring	VBH1335
	6	Guide Bar	VLL1514
	7	Sub Guide Bar	VLL1515
	8	Hold Spring	VNC1017
	9	Joint Spring	VNC1019
	10	Support Spring	VNC1020
NSP	11	Mechanism Chassis	VNE2248
	12	Slider	VNL1811
	13	Spacer	VNL1913
	14	Joint	VNL1914
	15	FFC Holder	VNL1915
	16	Screw	BBZ20P050FZK
	17	Tapping Screw	OBA8009
	18	Screw	PMA26P100FMC
	19	Damper Sheet	VEB1335

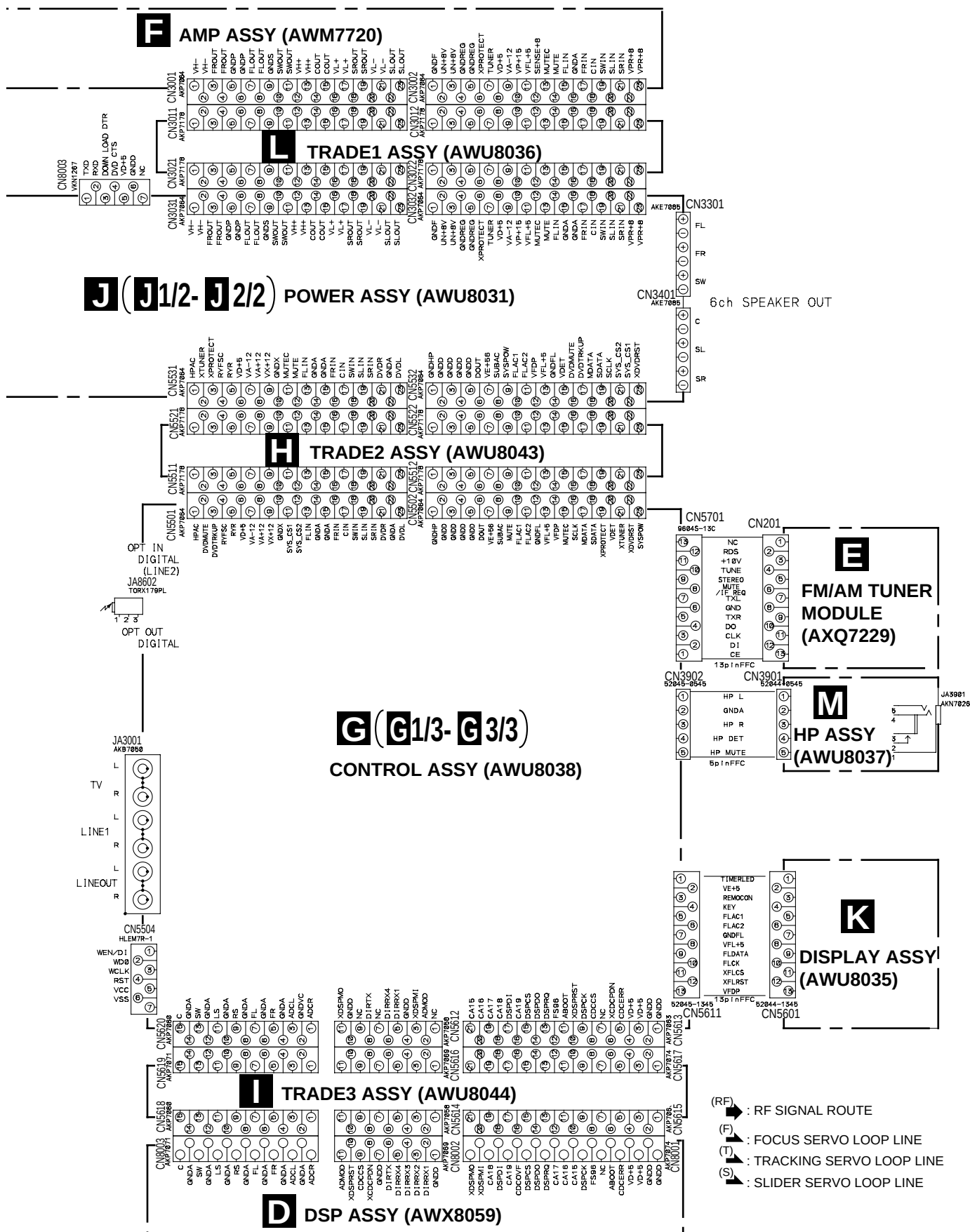
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

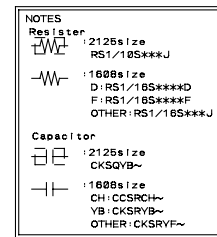
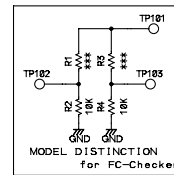
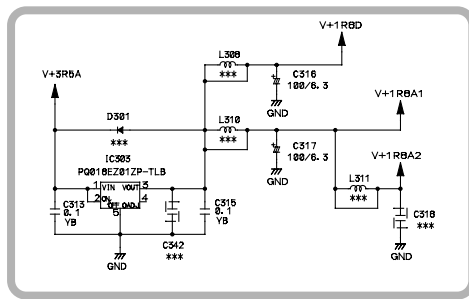
3.1 BLOCK DIAGRAM





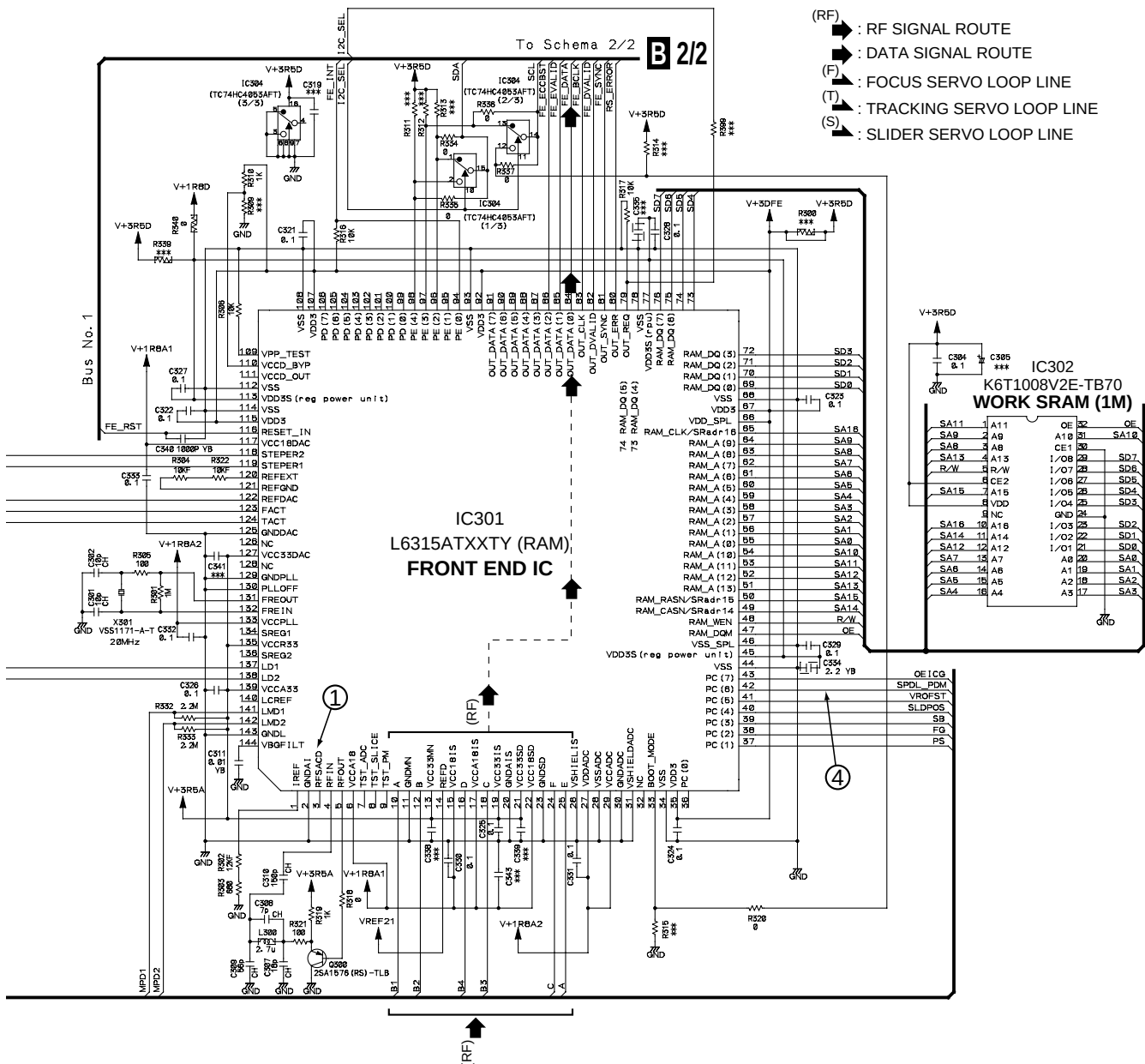
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST"





*** represent not mounted

- (RF) : RF SIGNAL ROUTE
- (F) : DATA SIGNAL ROUTE
- (F) : FOCUS SERVO LOOP LINE
- (T) : TRACKING SERVO LOOP LINE
- (S) : SLIDER SERVO LOOP LINE



: The power supply is shown with the marked box.

A



E

C DVD IF ASSY (AWM7677)



 : The power supply is shown with the marked box.

NOTES

ALL CAPACITORS ARE IN μ F
UNLESS OTHERWISE SPECIFIED

CH : CCSRCH
SQ : CKSQVB
S : CKSVB
OTHER : CKSRYB

CEV***MH##

ALL RESISTORS ARE IN Ω

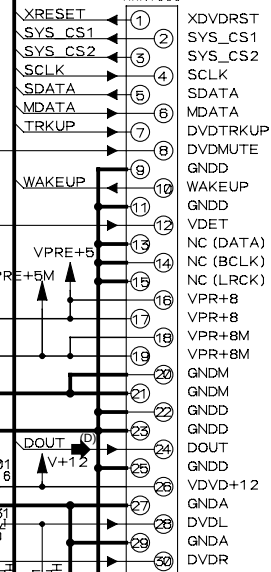
F : RS1/16S****F
1/10W : RS1/10S****J
OTHER : RS1/16S****J

ALL INDUCTORS ARE IN μ H

NO MARK DIODE

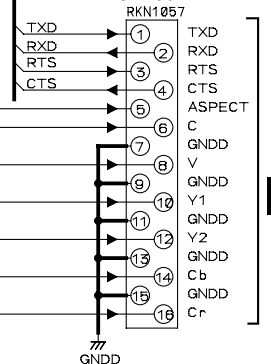
CN1901 1SS355

RKN1039



J CN5102

CN1902 RKN1057



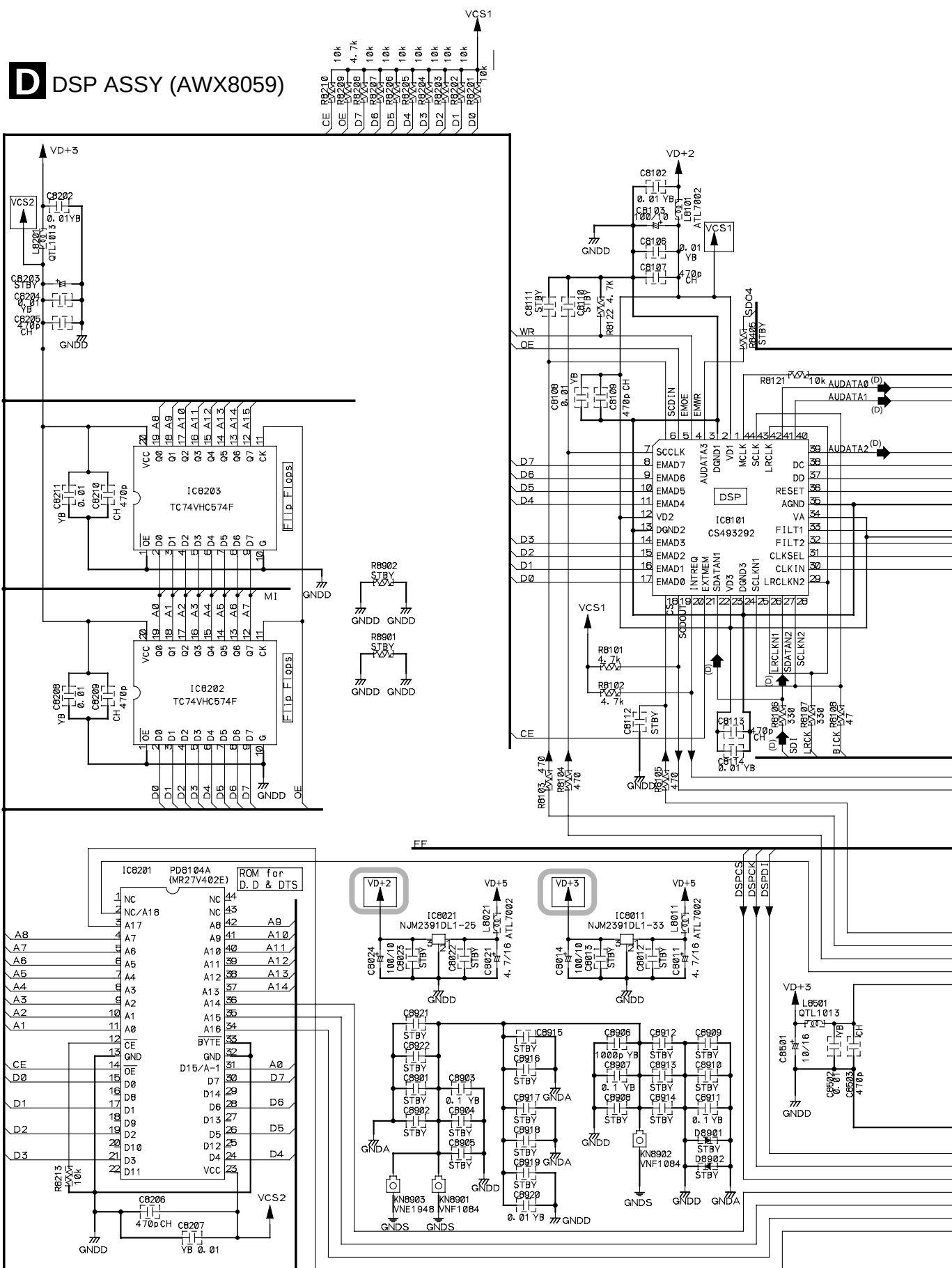
J CN8001

NORMAL : 3.5V
ABNORMAL : <0.5VDD
>0.85VDD

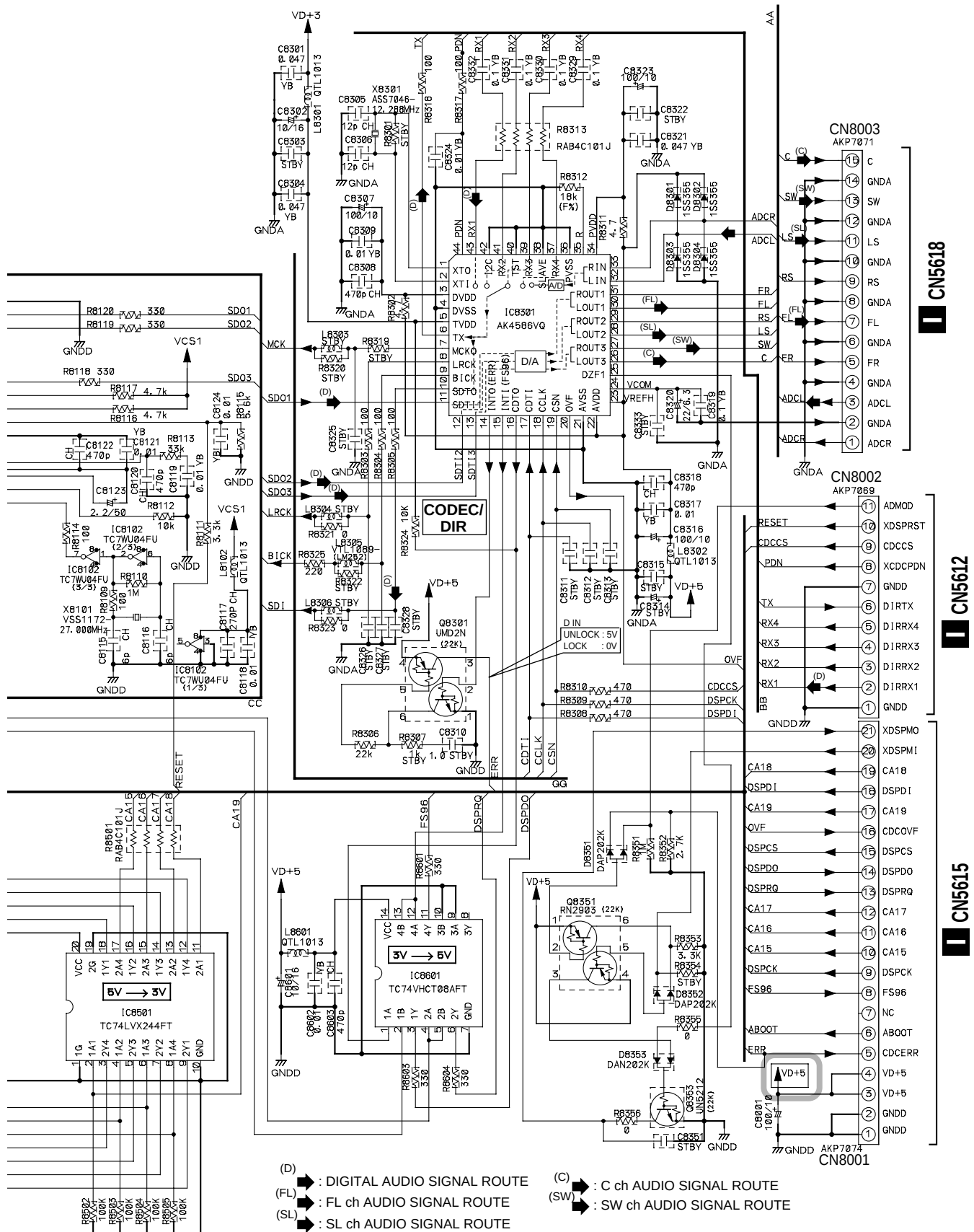
*VDD: SYSTEM CPU VDD

- (V) : VIDEO SIGNAL ROUTE
- (S_Y) : S-Y VIDEO SIGNAL ROUTE
- (S_C) : S-C VIDEO SIGNAL ROUTE
- (D) : DIGITAL AUDIO SIGNAL ROUTE
- (G/Y) : COMPONENT VIDEO G/Y SIGNAL ROUTE
- (B/Cb) : COMPONENT VIDEO B/Cb SIGNAL ROUTE
- (R/Cr) : COMPONENT VIDEO R/Cr SIGNAL ROUTE

3.6 DSP ASSY



 : The power supply is shown with the marked box.



28

28



Notes

1. RESISTORS

Indicated in Ω , 1/16W $\pm$ 5% Tolerance unless otherwise noted K;K Ω , M;M Ω .

2. CAPACITORS

Indicated in Capacity (μ F)/VOLTAGE (V) unless otherwise noted P:PF.

3. DIODES

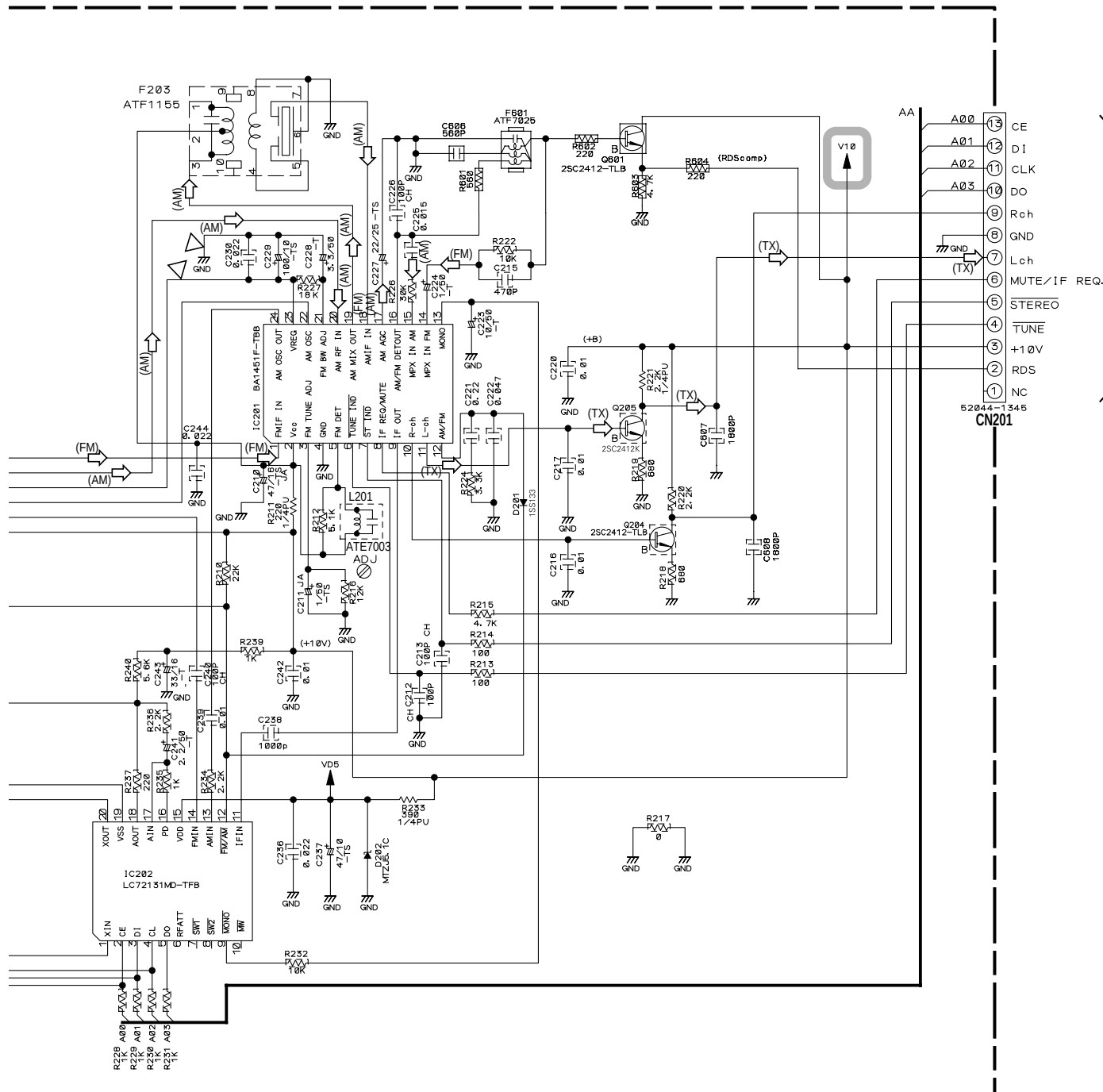
No mark diode is 1SS133.

 : The power supply is shown with the marked box.

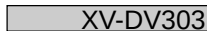
(TX) ➡ : AUDIO SIGNAL ROUTE (TUNER)

(AM)  : AM SIGNAL ROUTE

(FM) : FM SIGNAL ROUTE



30





(FL) ➡ : FL ch AUDIO SIGNAL ROUTE
(SL) ➡ : SL ch AUDIO SIGNAL ROUTE
(C) ➡ : C ch AUDIO SIGNAL ROUTE
(SW) ➡ : SW ch AUDIO SIGNAL ROUTE

XV-DV303





34

A



C

D

E

F

G 1/3

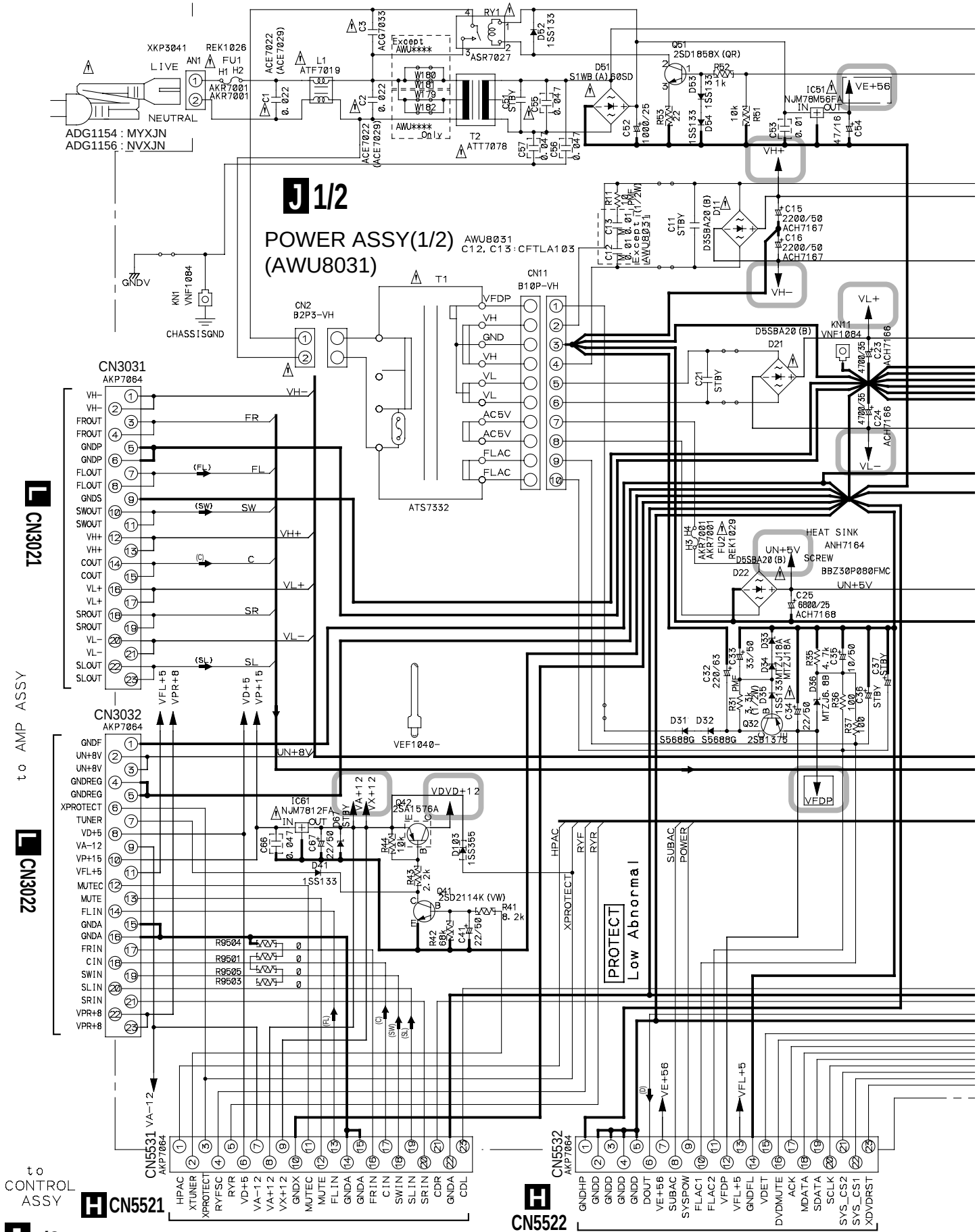
G 2/3

G 3/3



G 3/3

3.12 POWER ASSY(1/2)





3.13 POWER ASSY(2/2) and TRADE1 ASSY

CAUTION : FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE.
REPLACE ONLY WITH SAME TYPE
NO. 491007 FOR IC25 MFD, BY
LITTELFUSE INC.

to POWER

ASSY CN3021
AKP7178

L TRADE1 ASSY
(AWU8036)

to AMP ASSY

CN3011
AKP7178

J CN3031

VH- (1)
VH- (2)
FROUT (3)
FROUT (4)
GNDP (5)
GNDP (6)
FLOUT (7)
FLOUT (8)
GNDS (9)
SWOUT (10)
SWOUT (11)
VH+ (12)
VH+ (13)
COUT (14)
COUT (15)
VL+ (16)
VL+ (17)
SROUT (18)
SROUT (19)
VL- (20)
VL- (21)
SLOUT (22)
SLOUT (23)

IC25
7A (AEK7047)

(FL)
(FL)
(SW)
(SW)

(C)
(C)

(SL)
(SL)

VH- (1)
VH- (2)
FROUT (3)
FROUT (4)
GNDP (5)
GNDP (6)
FLOUT (7)
FLOUT (8)
GNDS (9)
SWOUT (10)
SWOUT (11)
VH+ (12)
VH+ (13)
COUT (14)
COUT (15)
VL+ (16)
VL+ (17)
SROUT (18)
SROUT (19)
VL- (20)
VL- (21)
SLOUT (22)
SLOUT (23)

F CN3001

AMP ASSY

C CN1902

F CN3002

AMP ASSY

from DVD IF ASSY

CN8003
VKN1267

NC (7)
GNDD (6)
VD+5 (5)
DVD CTS (4)
DOWN LOAD DTR (3)
RXD (2)
TXD (1)

VD+5

GNDD

CN8001
VKN1247

TXD (1)
RXD (2)
RTS (3)
CTS (4)
ASPECT (5)
C (6)
GND (7)
V (8)
GND (9)
Y (10)
GND (11)
G/Y (12)
GND (13)
B/Cb (14)
GND (15)
R/Cr (16)

CN3022
AKP7178

CN3012
AKP7178

J CN3021

GNDF (1)
UN+8V (2)
UN+8V (3)
GNDREG (4)
GNDREG (5)
XPROTECT (6)
TUNER (7)
VD+5 (8)
VA-12 (9)
VP+15 (10)
VFL+5 (11)
MUTEC (12)
MUTE (13)
FLIN (14)
GNDA (15)
GNDA (16)
FRIN (17)
CIN (18)
SWIN (19)
SLIN (20)
SRIN (21)
VPR+8 (22)
VPR+8 (23)

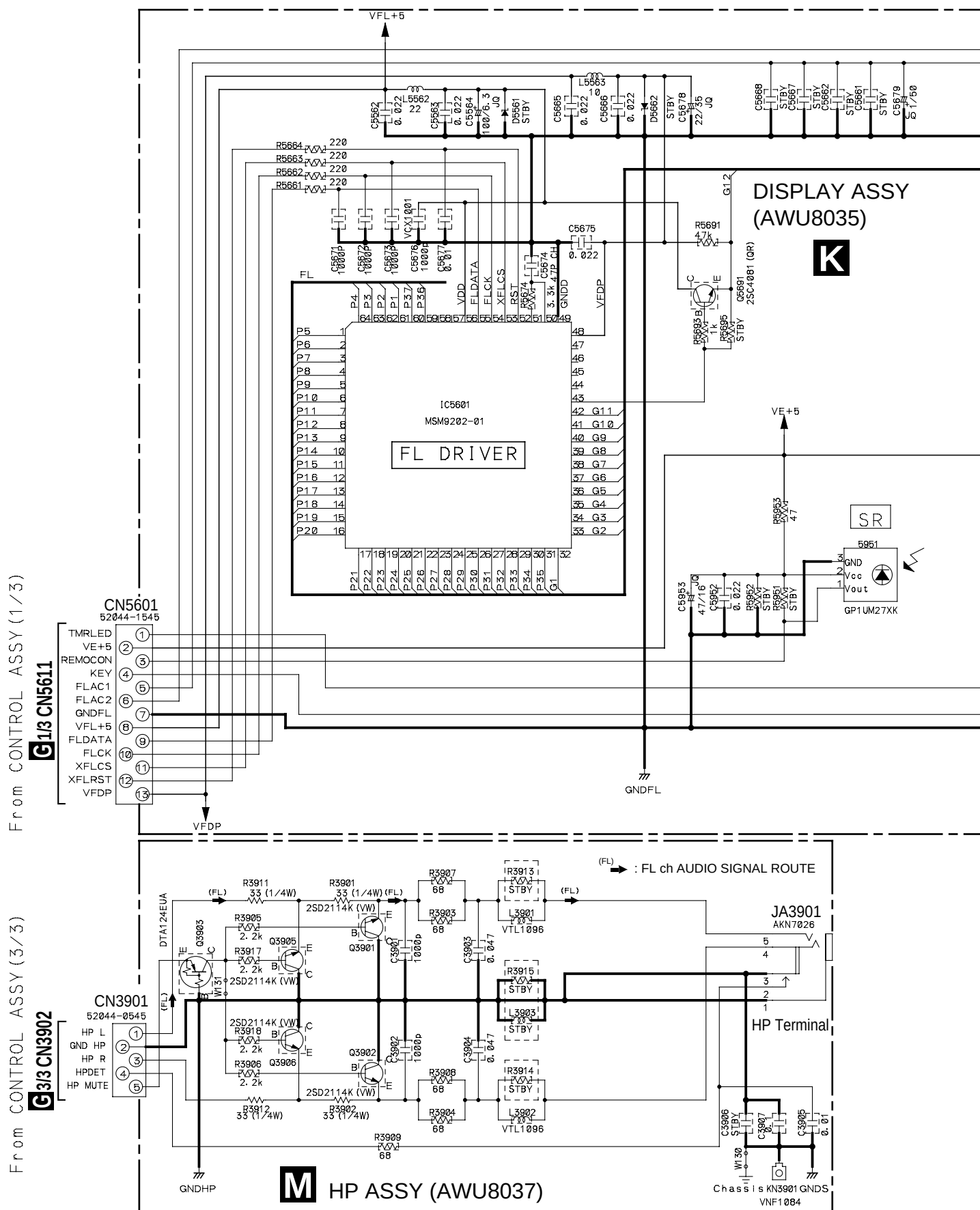
R98
[XXX]
27k

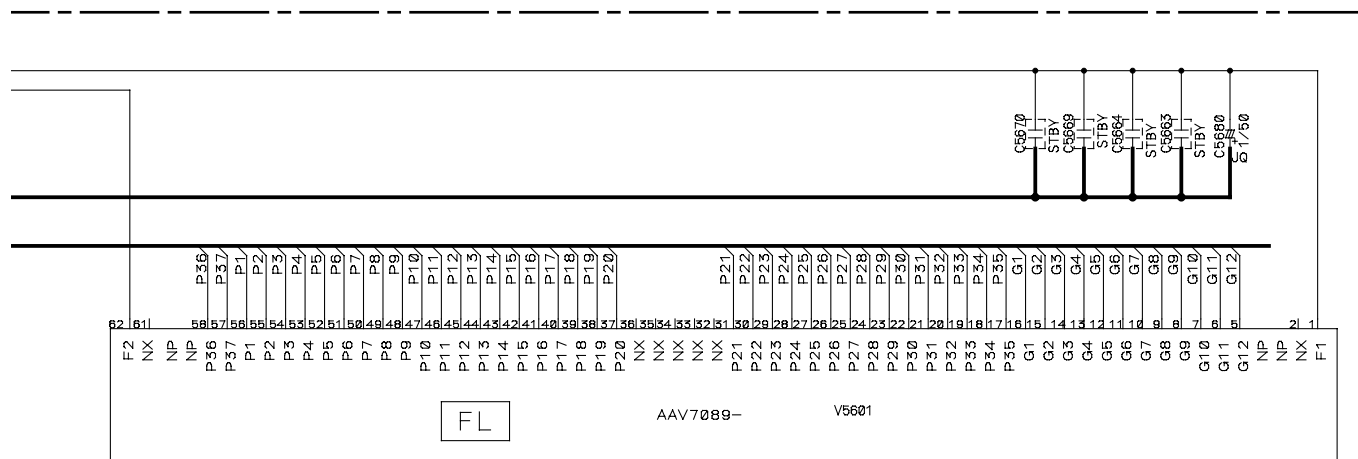
R9507 [XXX] 0
R9506 [XXX] 0
R9509 [XXX] 0
R9510 [XXX] 0
R9511 [XXX] 0

GNDF (1)
UN+8V (2)
UN+8V (3)
GNDREG (4)
GNDREG (5)
XPROTECT (6)
TUNER (7)
VD+5 (8)
VA-12 (9)
VP+15 (10)
VFL+5 (11)
SENSE+8 (12)
MUTEC (13)
MUTE (14)
FLIN (15)
GNDA (16)
FRIN (17)
CIN (18)
SWIN (19)
SLIN (20)
SRIN (21)
VPR+8 (22)
VPR+8 (23)

J 2/2 **L**

3.14 DISPLAY and HP ASSYS





AEB7069 ×2

(FL spacer)
5671**SWITCHES**

S5921 : Power ON

S5922 : Vol Up

S5923 : Vol Down

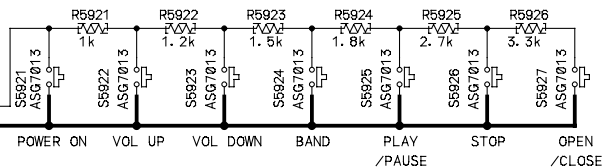
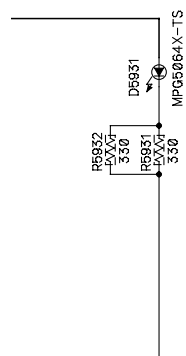
S5924 : Band

S5925 : Play/Pause

S5926 : Stop

S5927 : Open/Close

TIMER LED



KEY

NOTES

ALL CAPACITORS ARE IN μF
UNLESS OTHERWISE SPECIFIEDCH : CCSRCH
(OTHER : CKSRYB)

JQ : CEJQ

ALL RESISTORS ARE IN Ω

RS1/16S***J

ALL INDUCTORS ARE IN μH

LAU***J

NO MARK DIODE

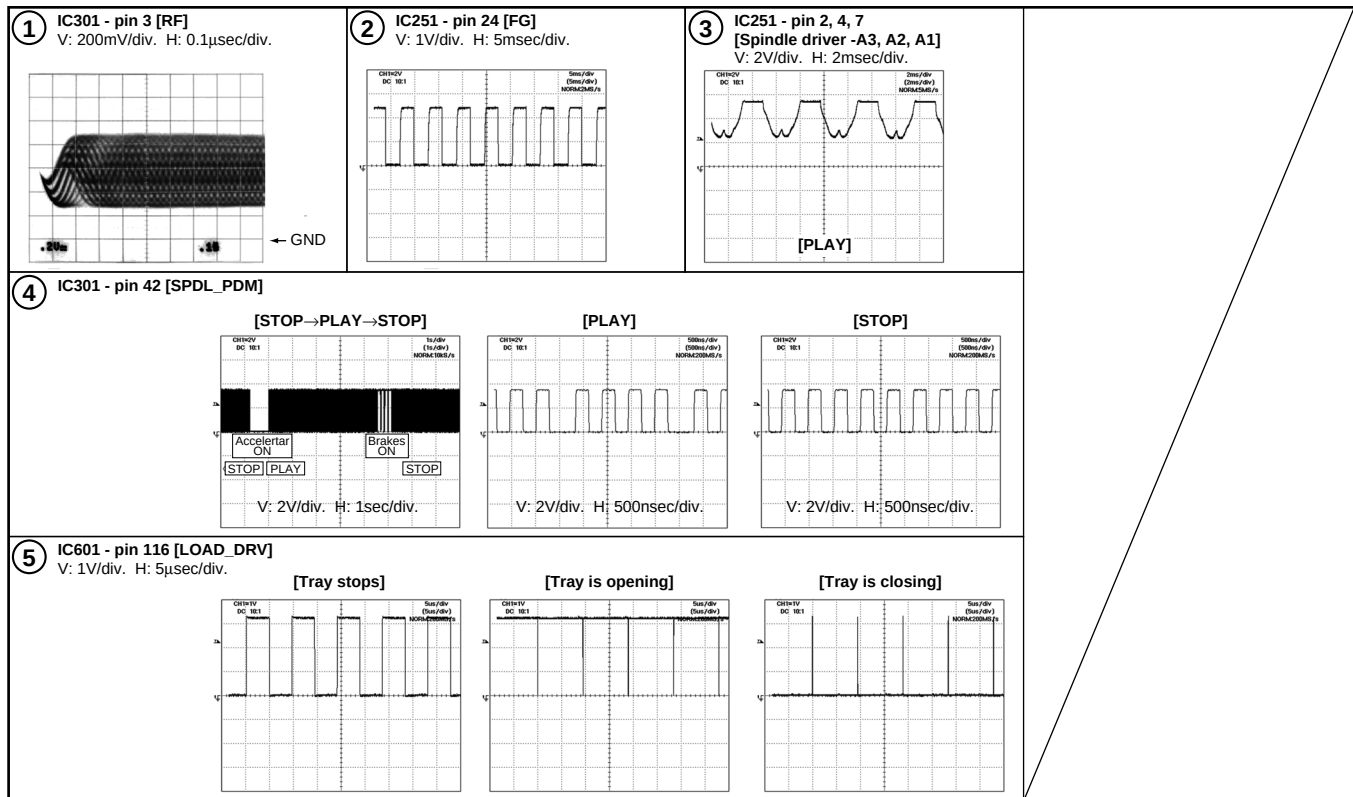
1SS133

3.15 WAVEFORMS

Note : The encircled numbers denote measuring point in the schematic diagram.

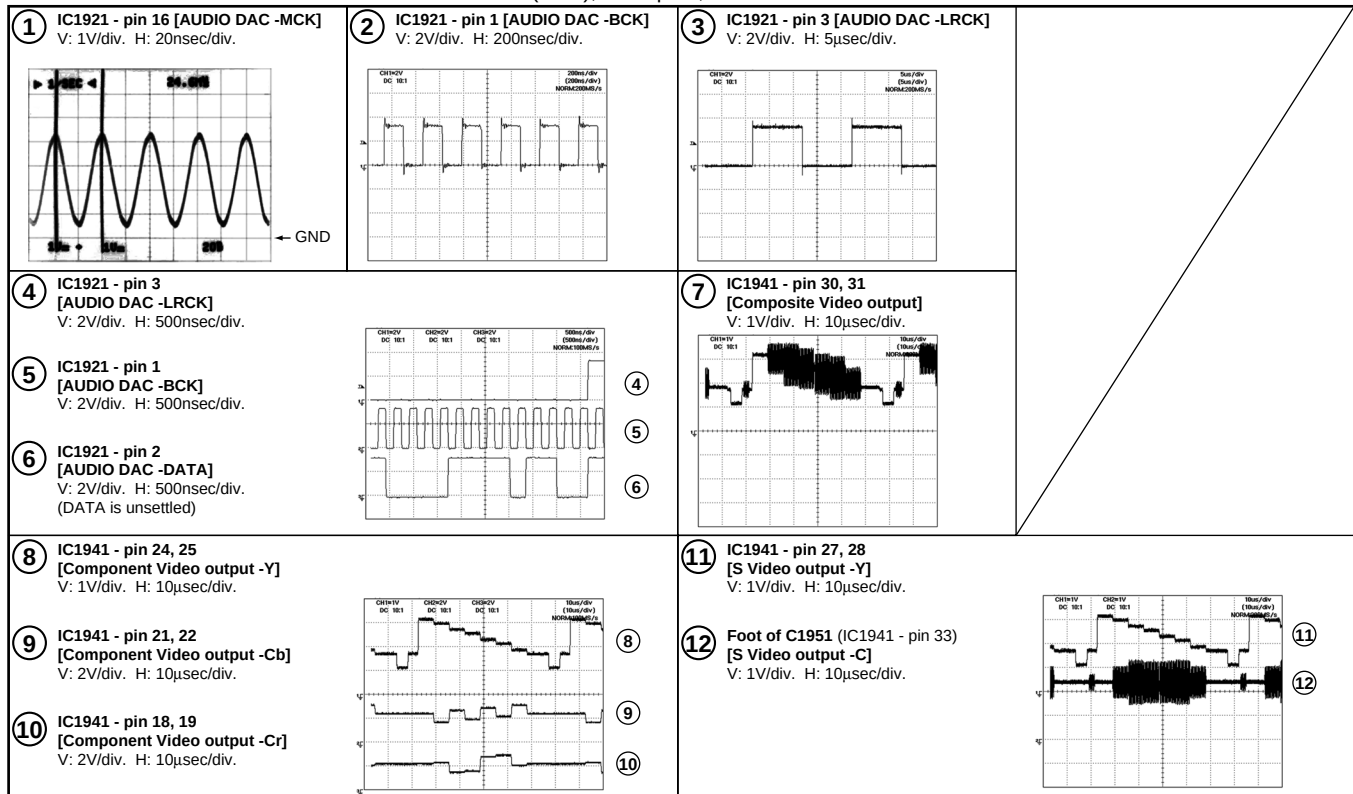
B DVDM ASSY

Measurement condition : No. 1 and 2 : reference A1 (DVD), T2-chp 19, Color-bar



C DVD IF ASSY

Measurement condition : No. 1 to 6 : reference A1 (DVD), T2-chp 1
No. 7 to 12 : reference A1 (DVD), T2-chp 19, Color-bar



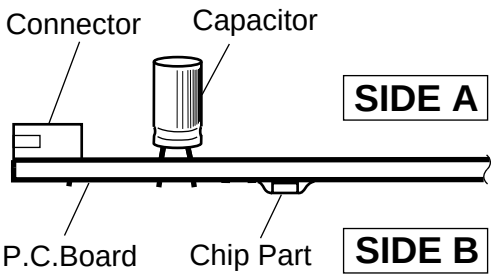
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

- 1. Part numbers in PCB diagrams match those in the schematic diagrams.
- 2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

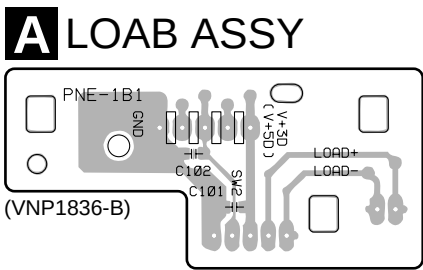
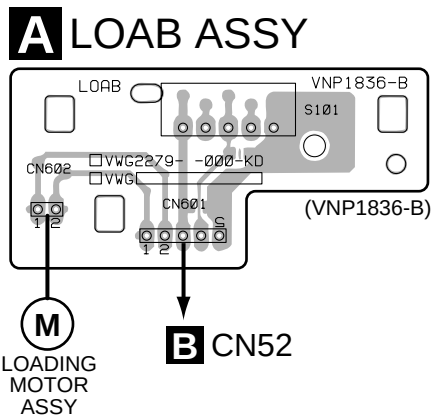
- 3. The parts mounted on this PCB include all necessary parts for several destinations.
- For further information for respective destinations, be sure to check with the schematic diagram.
- 4. View point of PCB diagrams.



4.1 LOAB ASSY

SIDE A

SIDE B



SIDE A

IC601

Q607 Q606 Q605 Q604 Q603 Q602

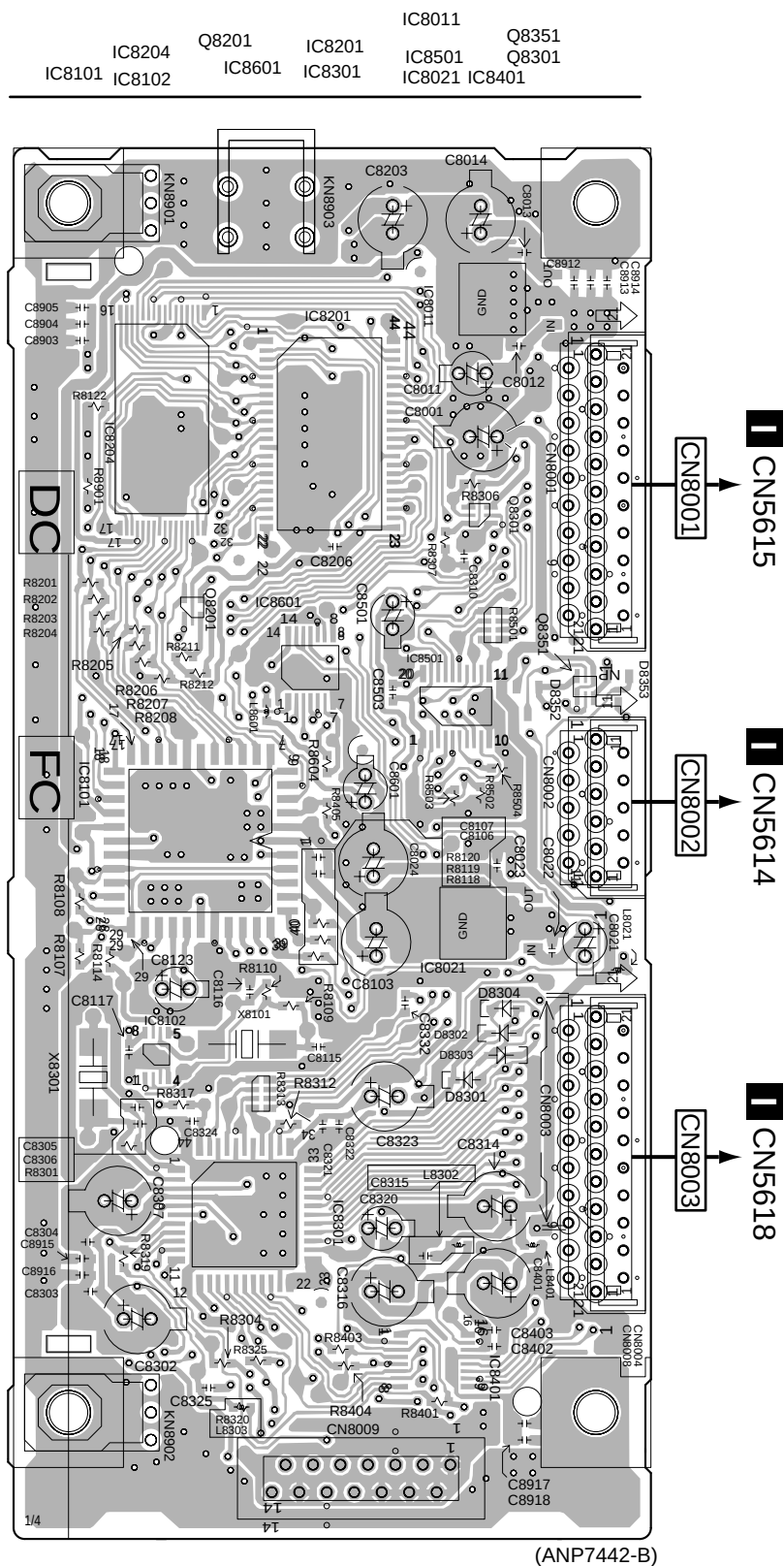


4.4 DSP ASSY

SIDE A

SIDE A

D DSP ASSY



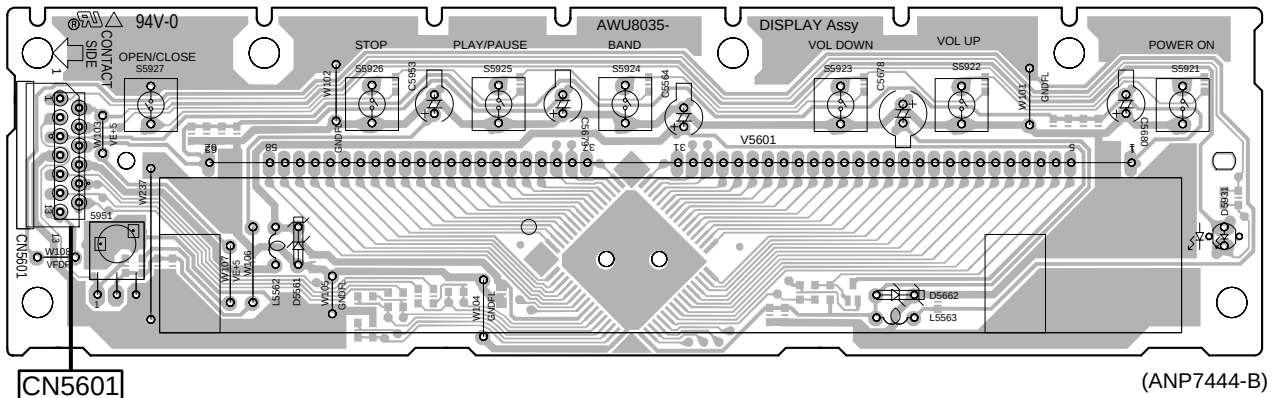
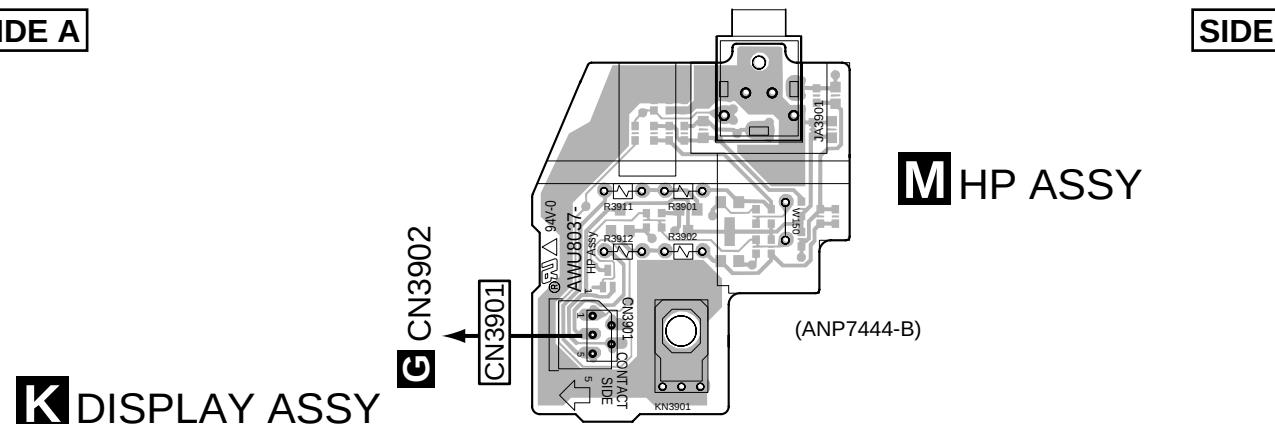
4.6 DISPLAY and HP ASSYS

SIDE A

SIDE A

K DISPLAY ASSY

M HP ASSY

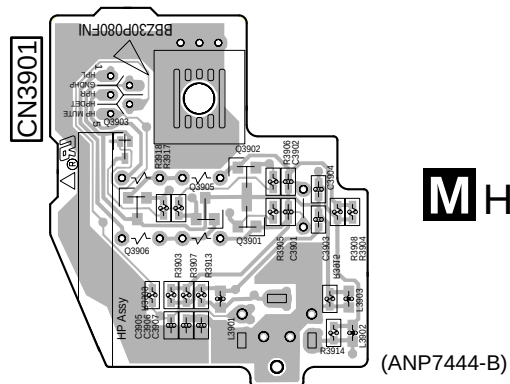
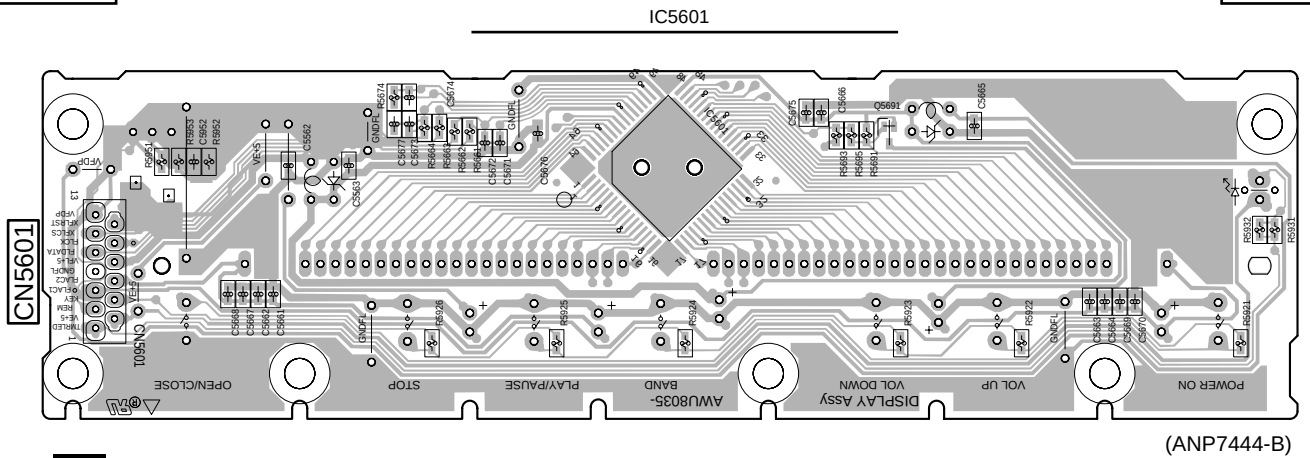


SIDE B

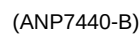
SIDE B

K DISPLAY ASSY

M HP ASSY



SIDE A

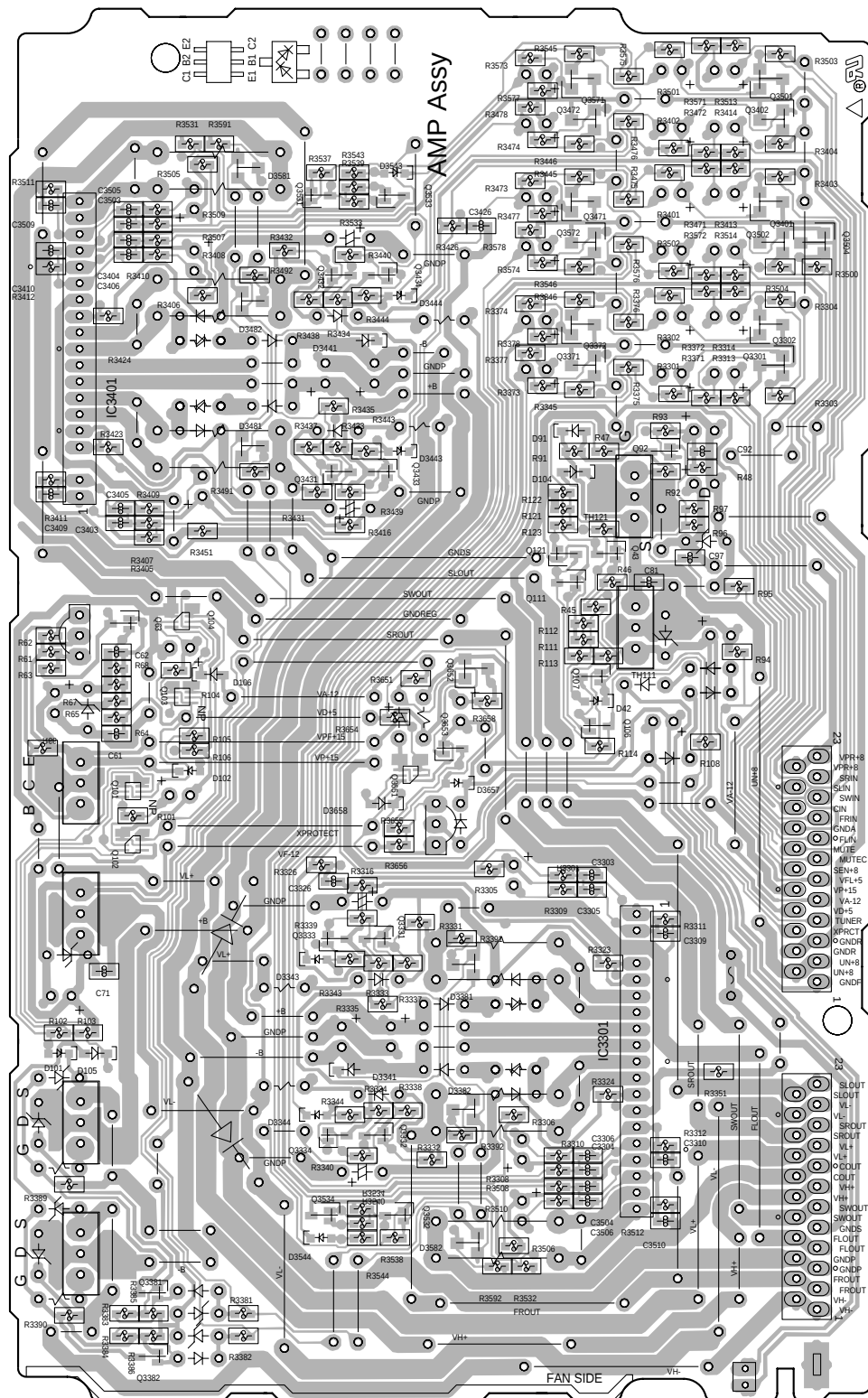


SIDE B

F AMP ASSY

SIDE B

Q101 Q63 Q3331 Q3533 Q3572 Q3402
Q102 Q3381 Q3332 Q121 Q3471
Q103 Q3334 Q3653 Q3371 Q3372 Q92 Q3502 Q3401
Q3382 Q104 Q3532 Q111 Q107 Q106 Q43 Q3301 Q3302 Q3504

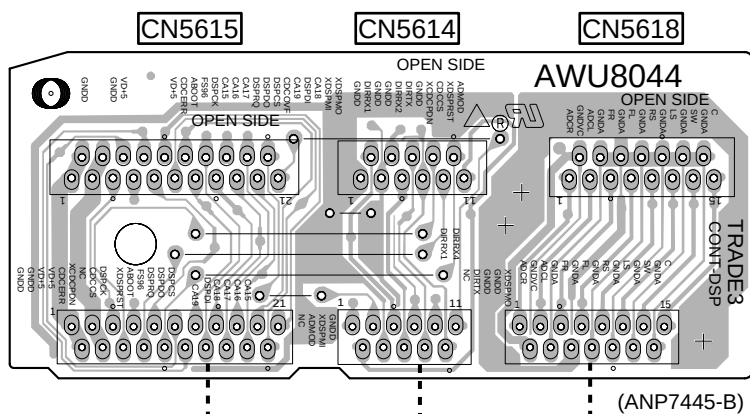


58

SIDE B

G CONTROL ASSY

TRADE3 ASSY



Q3053
Q3001 Q3002
Q3003 IC3053
Q3062

Q3005 Q3056 IC3051
Q3009 Q3057 IC3052
Q3004 Q3055 IC3003

IC3002 IC3001

Q3006 Q3010

Q3051 IC3054

Q3054 Q3007

Q115

Q5711 Q3052

Q114

Q3061

Q3058 IC3059

IC3058 IC3055

IC3058 IC3055

Q3069 IC3060



IC3057

Q3067

IC3056

Q3068

IC5701

IC5501

Q5571

Q5501 Q3065

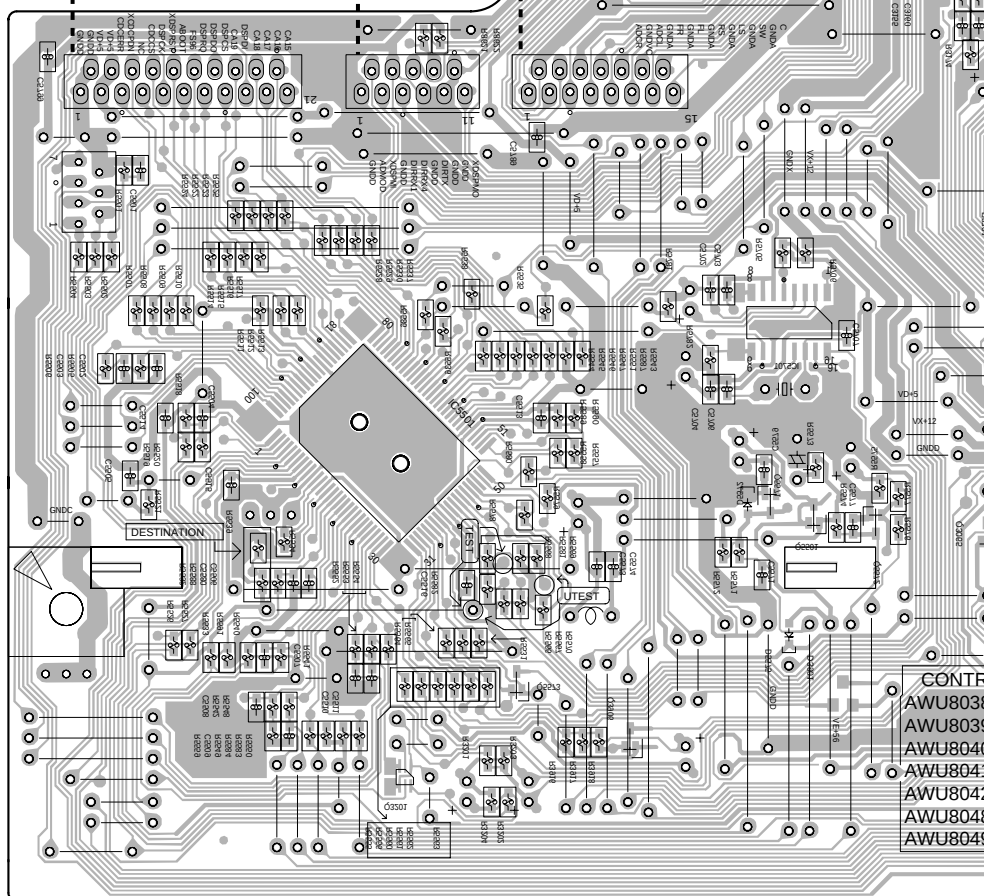
Q5572

Q3908 IC3901

Q3907

Q5573 Q3906

Q3201



CONTR
AWU8038
AWU8039
AWU8040
AWU8041
AWU8042
AWU8048
AWU8049

4.9 POWER and TRADE1 ASSYS

SIDE A

J POWER ASSY

Q3641

IC51 Q51

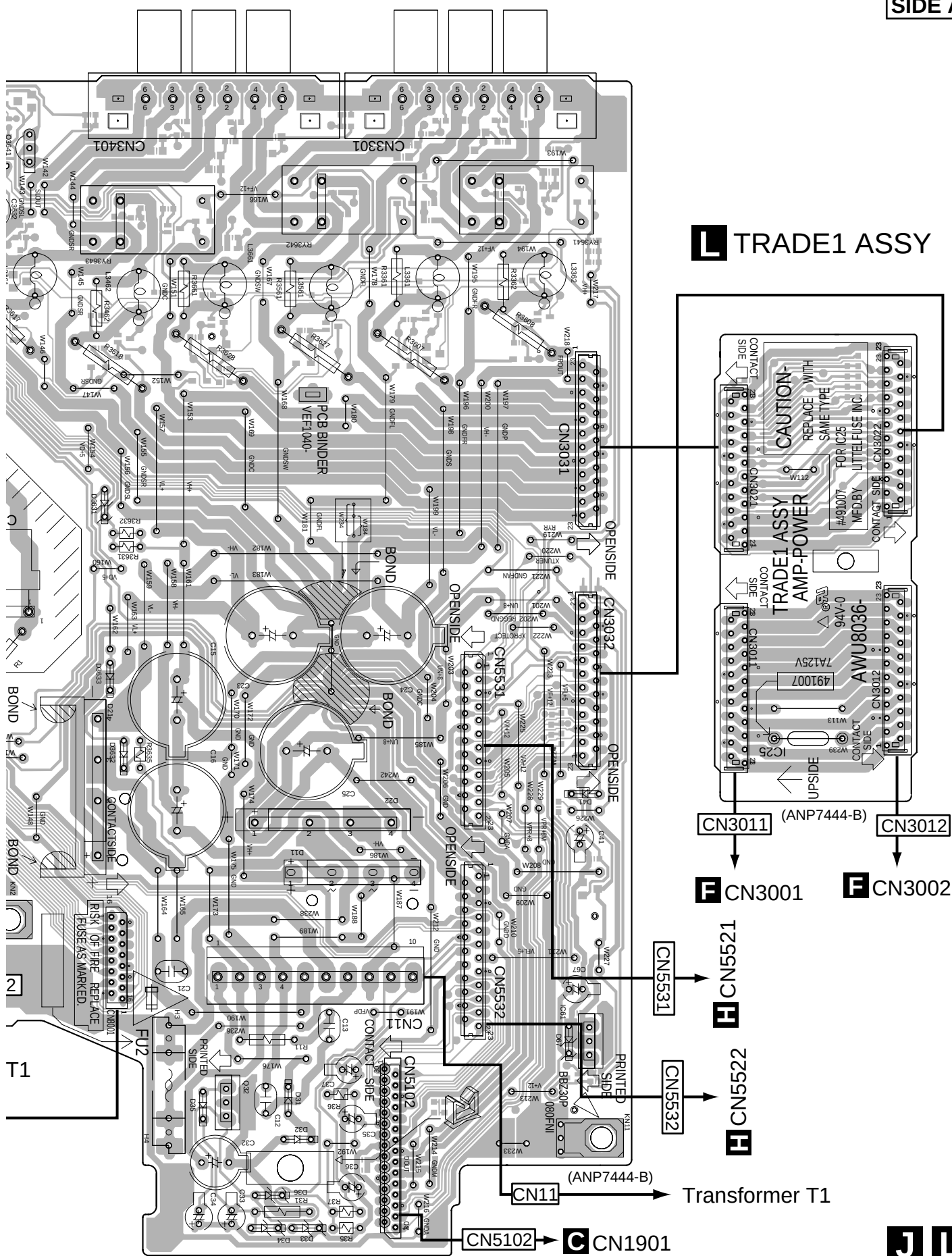
Q32 IC61

AC IN

Transformer T1

CN1902 CN8001

XV-DV303



1

2

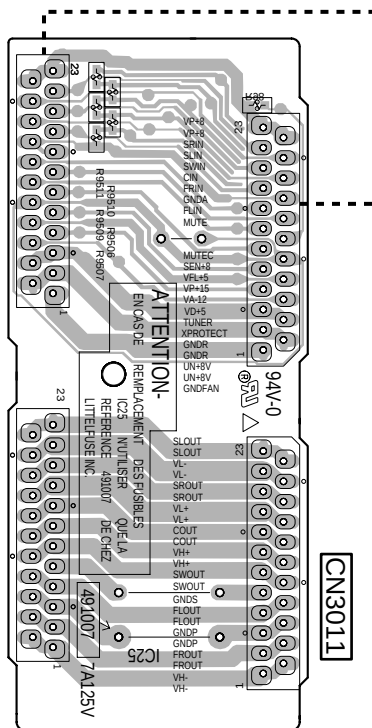
3

4

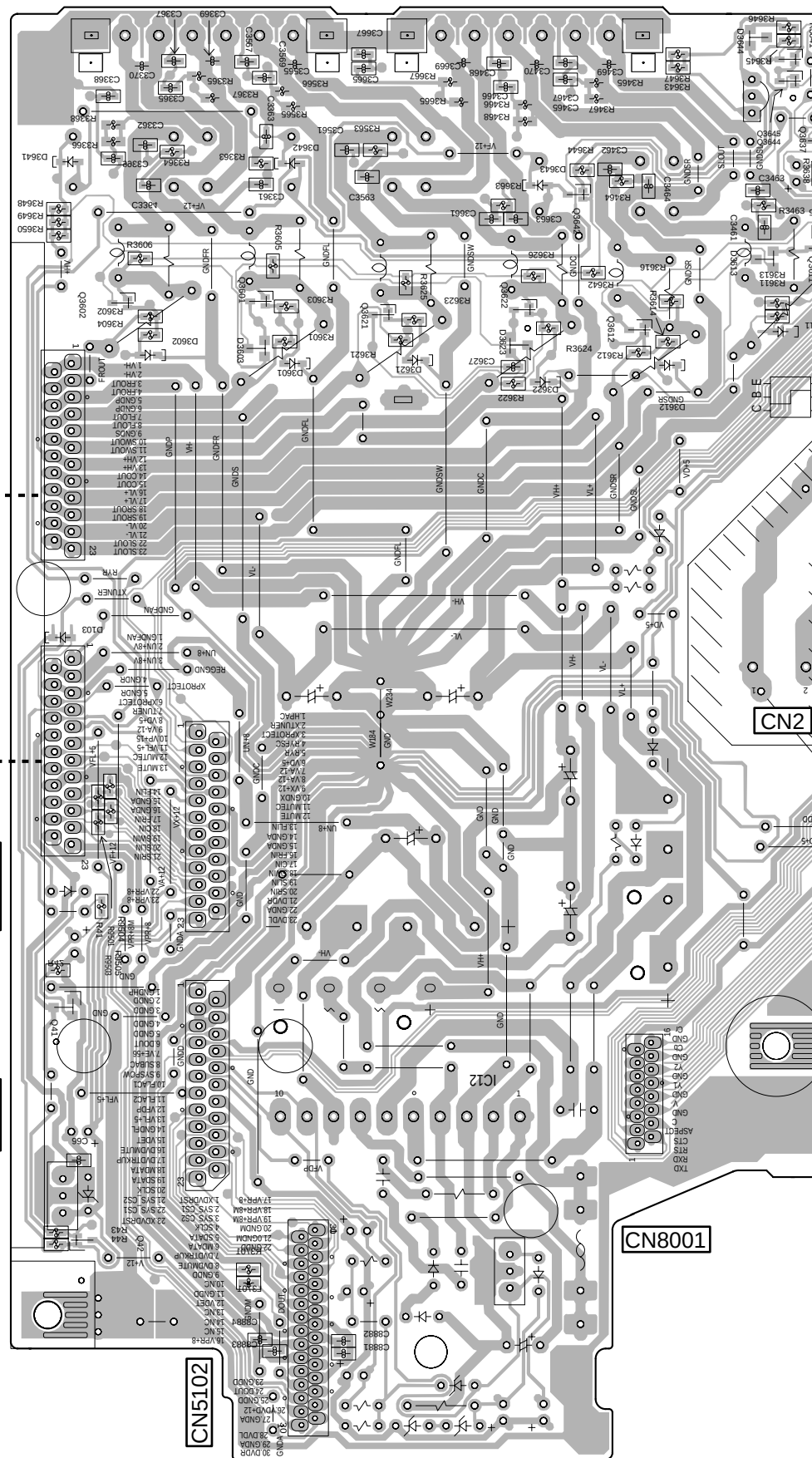
SIDE B

POWER ASSY

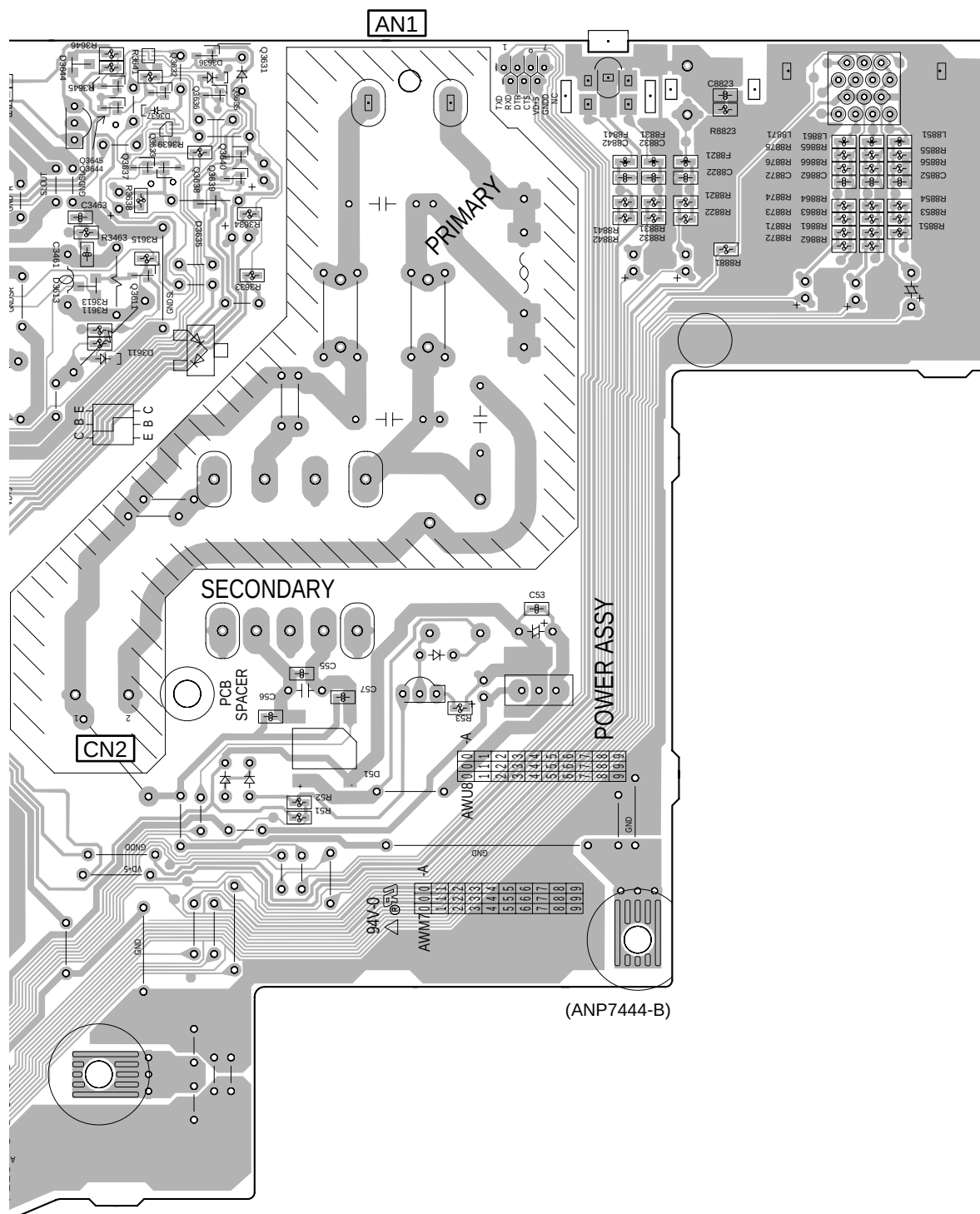
TRADE1 ASSY



(ANP7444-B)



XV-DV303



Q3632 Q3631
Q3636 Q3635
Q3633 Q3640
Q3645 Q3637
Q3644 Q3638 Q3639

Q3642 Q3611
Q3602 Q3601
Q3621 Q3622 Q3612

Q41

Q42

5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.

●The Δ mark found on some component parts indicates the importance of the safety factor of the part.

Therefore, when replacing, be sure to use parts of identical designation.

●When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω $\rightarrow$ 56×10^1 $\rightarrow$ 561 RD1/4PU $\begin{bmatrix} 5 \\ 6 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \end{bmatrix} J$

47k Ω $\rightarrow$ 47×10^3 $\rightarrow$ 473 RD1/4PU $\begin{bmatrix} 4 \\ 7 \end{bmatrix} \begin{bmatrix} 3 \\ 3 \end{bmatrix} J$

0.5 Ω $\rightarrow$ R50 RN2H $\begin{bmatrix} R \\ 5 \end{bmatrix} \begin{bmatrix} 0 \\ 0 \end{bmatrix} K$

1 Ω $\rightarrow$ 1R0 RS1P $\begin{bmatrix} 1 \\ R \end{bmatrix} \begin{bmatrix} 0 \\ 0 \end{bmatrix} K$

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω $\rightarrow$ 562×10^1 $\rightarrow$ 5621 RN1/4PC $\begin{bmatrix} 5 \\ 6 \end{bmatrix} \begin{bmatrix} 2 \\ 1 \end{bmatrix} F$

Mark No. Description Part No.

LIST OF ASSEMBLIES

NSP 1..LOADING MECHANISM ASSY VWT1188
NSP 2..LOAB ASSY VWG2279

NSP 1..DVD ASSY AXA7116
2..DVDM ASSY AWM7750
2..DVD IF ASSY AWM7677

1..DSP ASSY AWX8059
1..FM/AM TUNER MODULE AXQ7229

NSP 1..6CH AMP MODULE AXQ7242
2..AMP ASSY AWM7720

NSP 1..DCS2 MAIN ASSY AWM7730
2..CONTROL ASSY AWU8038
2..TRADE2 ASSY AWU8043
2..TRADE3 ASSY AWU8044

NSP 1..DCS COMPLEX ASSY AWM7726
2..POWER ASSY AWU8031
2..DISPLAY ASSY AWU8035
2..TRADE1 ASSY AWU8036
2..HP ASSY AWU8037

Mark No. Description Part No.

A LOAB ASSY

SWITCH

S101 VSK1011

OTHERS

CN602 KR Connector S2B-PH-K
CN601 KR Connector S5B-PH-K
PC BOARD LOAB VNP1836

B DVDM ASSY

SEMICONDUCTORS

IC110 BA10358FV
IC251 BA6664FM
IC604 K4S641632F-TC75
IC302 K6T1008V2E-TB70
IC301 L6315ATXXTY

IC351 M56788AFP
 Δ IC303 PQ018EZ01ZP
IC601 STI5519AVB-B0C
IC605 TC7WU04FU
IC603 VYW1999

Q300, Q602-Q607 2SA1576A
Q652 DTC114TUA

Mark No. Description Part No.

Q101, Q102 HN1A01F
Q103 HN1C01FU
Q601 RN4982
D601 RB501V-40

COILS AND FILTERS

L6990 Chip Beads ATL7007
L300 LCYA2R7J2520
L5010, L5020, L5040 Chip Beads VTL1075

CAPACITORS

C301, C302 CCSRCH100D50
C310 CCSRCH151J50
C307 CCSRCH180J50
C360 CCSRCH330J50
C391 CCSRCH331J50

C351, C651 CCSRCH470J50
C627, C638, C696 CCSRCH471J50
C309 CCSRCH560J50
C633, C634 CCSRCH6R0D50
C308 CCSRCH7R0D50

C113 CEV100M35
C104 CEV101M4
C316, C317, C405, C414, C614 CEV101M6R3
C617, C619 CEV101M6R3
C111, C404 CEV220M16

C368 CEV470M16
C334 CKSQYB225K10
C340, C641 CKSRYB102K50
C259, C311 CKSRYB103K50
C106, C248-C251, C255, C313 CKSRYB104K16

C315, C636, C637, C697 CKSRYB104K16
C257, C258 CKSRYB223K50
C357 CKSRYB472K50
C103, C105, C148, C157, C158 CKSRYF104Z25
C253, C256, C304, C321-C333 CKSRYF104Z25

C365, C366, C603, C605, C607 CKSRYF104Z25
C612, C615, C616, C632 CKSRYF104Z25
C606, C608-C611, C613 CKSRYF105Z10
C622, C623, C629, C635, C699 CKSRYF105Z10

RESISTORS

R121 RAB4C220J
R123 RAB4C390J
R340, R407 RS1/10S0R0J
R341 RS1/10S101J
R126-R129, R176-R179 RS1/10S220J

R254-R259 RS1/10S3R3J
R326-R330 RS1/16S1001F

Mark No.	Description	Part No.
R147, R265, R266, R304, R322 R377, R378, R392, R393 R344, R351, R353, R354 R359, R360, R365, R367, R368 R372, R374, R376		RS1/16S1002F RS1/16S1002F RS1/16S1003D RS1/16S1003D RS1/16S1003D
R331, R385 R302 R358, R394 R146 R612, R613		RS1/16S1003F RS1/16S1202F RS1/16S1503F RS1/16S1801F RS1/16S1802F
R675, R678, R681, R684, R687 R690 R345, R355, R370, R371 R346, R356, R357, R362, R364 R373		RS1/16S2700F RS1/16S2700F RS1/16S3902F RS1/16S6802F RS1/16S6802F
R3730 Other Resistors		RS1/16S8202F RS1/16S□□□J

OTHERS

CN2 12P Connector CN8 26P Connector CN4 4P FFC Connector CN9 PH Connector Flexible Cable	AKN7031 AKN7032 RKN1045 S5B-PH-SM3 VDA1681
CN25 23P FFC Connector CN22 30P FFC Connector X301 (20MHz)	VKN1318 VKN1322 VSS1171
X601 (27MHz)	VSS1172

C DVD IF ASSY

SEMICONDUCTORS

⚠ IC1902 IC1941 ⚠ IC1906 ⚠ IC1901, IC1903 IC1921	BA06FP MM1567AJ NJM2391DL1-33 NJM78M05DL1A PCM1742KE
⚠ IC1904 ⚠ IC1905 IC1962 IC1961 Q1931	PQ025EH01ZP S-8540B00FN-IMA TC74VHC125FT TC74VHCT125AFT 2SA1576A
⚠ Q1901 Q1941, Q1961 Q1942 Q1921, Q1922, Q1932 D1901, D1932-D1935	CPH6312 RN1903 RN2903 UN5212 1SS355
D1902 D1931	RB051L-40 UDZS5.1B

COILS AND FILTERS

L1901 SMD Power Inductor L1902 SMD Power Inductor L1903 SMD Power Inductor	ATL7003 ATL7004 ATL7005
--	-------------------------------

CAPACITORS

C1931, C1932 C1920 C1901, C1904, C1906, C1912, C1925 C1930, C1953	CCSRCH102J50 CCSRCH121J50 CEV101M16 CEV101M16
--	--

Mark No.	Description	Part No.
C1910, C1922, C1997 C1917 C1903, C1908, C1928, C1950, C1996 C1915 C1902, C1905, C1907, C1909, C1918		CEV101M4 CEV221M4 CEV470M6R3 CKSQYB105K16 CKSRYB104K16
C1923, C1924, C1926, C1929, C1933 C1941, C1943, C1945, C1947-C1949 C1951, C1952, C1955-C1957 C1961, C1962, C1991-C1995 C1914, C1999		CKSRYB104K16 CKSRYB104K16 CKSRYB104K16 CKSRYB104K16 CKSYB475K16
C1916, C1919, C1998 (10μF/10V)		DCH1148

RESISTORS

R1903 (0.68Ω/1/4W) R1904 (0.1Ω/10W) R1994, R1995 R1907 R1906	ACN7113 ACN7114 RS1/10S0R0J RS1/16S1502F RS1/16S3902F
R1908 Other Resistors	RS1/16S4700F RS1/16S□□□J

OTHERS

CN1901, CN1961 30P Connector CN1902 16P FFC Connector CN1962 26P FFC Connector	RKN1039 RKN1057 RKN1067
--	-------------------------------

D DSP ASSY

SEMICONDUCTORS

IC8301 IC8101 ⚠ IC8021 ⚠ IC8011 IC8201	AK4586VQ CS493292 NJM2391DL1-25 NJM2391DL1-33 PD8104A
IC8501 IC8202, IC8203 IC8601 IC8102 Q8351	TC74LVX244FT TC74VHC574F TC74VHCT08AFT TC7WU04FU RN2903
Q8301 Q8353 D8301-D8304 D8353 D8351, D8352	UMD2N UN5212 1SS355 DAN202K DAP202K

COILS AND FILTERS

L8011, L8021, L8101 Chip Solid Inductor L8102, L8201, L8301, L8302, L8501 L8601 Chip solid Inductor L8305 Chip Beads	ATL7002 QTL1013 QTL1013 VTL1089
---	--

CAPACITORS

C8305, C8306 C8117 C8107, C8109, C8113, C8120, C8122 C8205, C8206, C8209, C8210, C8308 C8318, C8503, C8603	CCSRCH120J50 CCSRCH271J50 CCSRCH471J50 CCSRCH471J50 CCSRCH471J50
C8115, C8116 C8302, C8501, C8601 C8001, C8014, C8024, C8103, C8307 C8316, C8323 C8320	CCSRCH6R0D50 CEAL100M16 CEAL101M10 CEAL101M10 CEAL220M6R3

Mark No.	Description	Part No.
C8123		CEAL2R2M50
C8011, C8021		CEAL4R7M16
C8906		CKSRYB102K50
C8102, C8106, C8108, C8114		CKSRYB103K50
C8118, C8119, C8121, C8124, C8202		CKSRYB103K50
C8204, C8207, C8208, C8211, C8309		CKSRYB103K50
C8317, C8324, C8502, C8602, C8920		CKSRYB103K50
C8319, C8329-C8332, C8903, C8907		CKSRYB104K25
C8911		CKSRYB104K25
C8301, C8304, C8321		CKSRYB473K25

RESISTORS

R8313, R8501	RAB4C101J
R8312	RS1/16S1802F
Other Resistors	RS1/16S□□□J

OTHERS

CN8002	11P Socket	AKP7069
CN8003	15P Socket	AKP7071
CN8001	21P Socket	AKP7074
X8301	(12.288MHz)	ASS7046
8903	Screw Plate	VNE1948
KN8901, KN8902	Earth Metal Fitting	VNF1084
X8101	(27MHz)	VSS1172

FM/AM TUNER MODULE

SEMICONDUCTORS

IC201	BA1451F
IC202	LC72131MD
Q201, Q204, Q205, Q601	2SC2412K
Q202	DTA124ES
Q203	DTC124EK
D201	1SS133
D202	MTZJ5.1C
D101	UDZS6.8B

COILS AND FILTERS

L201	FM Detector Coil (10.7MHz)	ATE7003
F202	FM Ceramic Filter	ATF-107
F201	FM Ceramic Filter	ATF-119
F203	AM Ceramic Filter	ATF1155
F601	Antibirdy Filter	ATF7025
L601		LCTA270J2520

CAPACITORS

C605	CCSQCH680J50
C212, C213, C226, C233-C235	CCSRCH101J50
C240, C614	CCSRCH101J50
C206	CCSRCH120J50
C231, C232	CCSRCH150J50
C223	CEAT100M50
C229	CEAT101M10
C224	CEAT1R0M50
C227	CEAT220M25
C241	CEAT2R2M50
C243	CEAT330M16
C228	CEAT3R3M50
C237	CEAT470M10
C211	CEJA1R0M50
C210	CEJA470M16
C103, C104, C204, C238	CKSRYB102K50

Mark No.	Description	Part No.
C102, C208, C216, C217, C220		CKSRYB103K50
C239, C242, C604, C615		CKSRYB103K50
C225		CKSRYB153K50
C607, C608		CKSRYB182K50
C201, C205, C214, C230, C236		CKSRYB223K50
C244		CKSRYB223K50
C221		CKSRYB224K10
C603		CKSRYB392K50
C215		CKSRYB471K50
C202, C222		CKSRYB473K16

C606

CKSRYB561K50

RESISTORS

R211	RD1/4PU221J
R221	RD1/4PU222J
R233	RD1/4PU391J
R103, R104	RS1/10S221J
Other Resistors	RS1/16S□□□J

OTHERS

CN201	13P FFC Connrctor	52044-1345
BN201	2P Terminal with PAL Shield Case	AKA7002
	Shield Case	ANK7072
	Shield Case	ANK7073
X201	(7.2000MHz)	ASS1093

F AMP ASSY

SEMICONDUCTORS

△ IC81	NJM7805FA
△ IC71	NJM7912FA
△ IC3301, IC3401	STK402-270
Q3382, Q43	2SA1576A
Q62	2SB1237X
Q111, Q3381, Q63, Q92	2SC4081
△ Q61	2SD2012
Q3301, Q3302, Q3401, Q3402	2SD2114K
Q3501, Q3502, Q3504	2SD2114K
Q3654	2SD2144S
Q107, Q3653	DTA124EUA
Q3652	DTA124TK
Q106	DTC124EUA
△ Q3383, Q91	IRFI9Z34G
△ Q3384	IRFIZ34G
Q3651	RN1901
Q101, Q103	UMB1N
Q102, Q104	UMH1N
△ D3321-D3326	1SR139-400
D3327, D3328	1SR139-400
△ D3421-D3426	1SR139-400
D3427, D3428	1SR139-400
D3387, D3388, D3651-D3655	1SS133
D101, D102, D104, D3657, D42	1SS355
△ D3381, D3382, D3481, D3482	DAN217
△ D3581, D3582	DAN217
D3391, D3392	LT2A03
D3389, D3390	MTZJ10C
△ D98	MTZJ11B
△ D72	MTZJ15C
D3393, D3394	MTZJ18B

Mark No.	Description	Part No.
⚠ D63	D3385, D3386	MTZJ18C
⚠ D82	D91	MTZJ36A
	D105, D106, D3658	MTZJ7.5C
		UDZS18B
		UDZS7.5B
TH111		NCP18WF104J03RB

CAPACITORS

C3305, C3306, C3405, C3406	CCSRCH221J50
C3505, C3506, C62, C97	CCSRCH221J50
C3309, C3310, C3409, C3410	CCSRCJ3R0C50
C3509, C3510	CCSRCJ3R0C50
C3307, C3308, C3407, C3408, C3508	CEAL100M16
C3507	CEAL470M6R3
C72	CEAT100M50
C3651	CEAT101M25
C101, C102	CEAT1R0M50
C3323, C3324, C3423, C3424	CEAT221M50
C3167, C3168, C3178, C3179	CEAT2R2M50
C3301, C3302, C3317, C3318	CEAT2R2M50
C3401, C3402, C3501, C3502	CEAT2R2M50
C3652, C63, C82, C98	CEAT470M25
C3653	CEAT470M35
C3303, C3304, C3403, C3404	CKSRYB102K50
C3503, C3504	CKSRYB102K50
C92	CKSRYB104K16
C71, C81	CKSRYB473K50

RESISTORS

⚠ R3327, R3328, R3427, R3428	RD1/4MUF470J
R3387, R3388	RD1/4PU101J
R3657	RD1/4PU330J
R96, R97	RS1/16S1002F
⚠ R3323, R3324, R3351, R3423, R3424	RS1/16S1R0J
⚠ R3451	RS1/16S1R0J
R67, R68	RS1/16S2201F
R94, R95	RS1/16S2701F
⚠ R62	RS1/16S330J
R65	RS1/16S4700F
R47, R48	RS1/16S4701F
R3317-R3320, R3417-R3420	RS2LMFR22J
R3517-R3520	RS2LMFR22J
Other Resistors	RS1/16S□□□J

OTHERS

CN3001, CN3002	23P Plug	AKP7064
CN3651	2P Plug	KM200SA2

G CONTROL ASSY

SEMICONDUCTORS

IC5701	BU1923F
IC3001	BU4052BCF
IC3059	BU4066BCF
IC3060	M62446FP
IC3002, IC3003, IC3051-IC3058, IC3061	NJM4558MD
IC3901	NJM4560M
IC5501	PDC098A
Q3906	2SA1576A
Q3005, Q3006, Q3009, Q3010, Q5501	2SC4081
Q5572, Q5711	2SC4081
Q3001, Q3002, Q3051-Q3057	2SD2114K

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
Q3067, Q3068, Q3907, Q3908		2SD2114K
Q3003, Q3004, Q3007, Q3061, Q3062		DTA124EUA
Q3065, Q3069		DTA124EUA
Q3060, Q3070		DTC124EUA
Q5571, Q5573		DTC143EUA
Q3201		RN2901
Q3058		UMX1N
D5575, D5712, D5721		1SS355
D3051		DAN217
D3901		DAP202K

D5711	UDZS11B
D3003, D3004	UDZS5.6B
D3052, D3053	UDZS6.8B

COILS AND FILTERS

L5571	LFEA220J
F8604 Chip Solid Inductor	VTF1096

CAPACITORS

C5575 (0.047μF/5.5V)	ACH1246
C3145, C3146, C3157, C3158, C3167	CCSRCH100D50
C3131-C3133, C3913, C3914, C5505	CCSRCH101J50
C5510, C5511, C5577, C5722, C5723	CCSRCH101J50
C3001-C3008	CCSRCH221J50
C5706, C5707	CCSRCH270J50
C5702	CCSRCH271J50
C3053, C3054	CCSRCH331J50
C3041, C3168, C3909, C3910	CCSRCH470J50
C3077, C3078	CCSRCH471J50

C5703	CCSRCH561J50
C3059, C3060	CCSRCH680J50
C3009, C3010	CCSRCH681J50
C3055, C3056, C3089	CCSRCH821J50
C3035, C3051, C3069, C3070	CEAL100M16

C3085, C3086, C3121, C3122, C3129	CEAL100M16
C3134, C3173, C3174, C3906, C5701	CEAL100M16
C5711	CEAL100M16
C3201, C3202	CEAL220M16
C3149	CEAL470M16

C5731, C5732	CEAL4R7M16
C3123	CEALR10M50
C3919, C3920	CEANP470M16
C3017-C3020, C3029, C3030	CEAT100M50
C3036-C3038, C3052, C3061-C3064	CEAT100M50

C3079-C3082, C3093-C3096, C3110	CEAT100M50
C3189, C3907, C3908, C3917, C3918	CEAT100M50
C5576	CEAT100M50
C5572	CEAT101M10
C3111, C5578	CEAT1R0M50

C3113, C3114	CEAT221M10
C3027, C3028, C3065, C3066	CEAT470M16
C3105, C3106, C3911, C3912, C5705	CEAT470M16
C8610	CEAT470M16
C3109, C3112	CEAT4R7M50

C3101	CEATR47M50
C3190	CEHAT100M50
C3150	CEHAT470M16
C5504, C5789, C5793, C5795	CKSRYB102K50
C3025, C3026, C3033, C3034	CKSRYB103K50

C3067, C3068, C3083, C3084	CKSRYB103K50
C3091, C3092, C3102, C3115, C3116	CKSRYB103K50
C3119, C3120, C3130, C3141, C3142	CKSRYB103K50

Mark No.	Description	Part No.
A	C3147, C3148, C3153, C3154	CKSRYB103K50
	C3159, C3160, C3163, C3169-C3172	CKSRYB103K50
	C3191, C3192, C5506-C5508, C5571	CKSRYB103K50
	C5573, C5580, C5704, C5794	CKSRYB103K50
	C5798, C5799	CKSRYB103K50
B	C3014-C3016, C3180, C3182, C3186	CKSRYB104K16
	C5513-C5516, C5574, C5791, C8609	CKSRYB104K16
	C8611	CKSRYB104K16
	C3071, C3072, C3075, C3076, C3087	CKSRYB152K50
	C3097, C3138	CKSRYB152K50
C	C3031, C3032, C3143, C3144	CKSRYB223K50
	C3155, C3156, C3165	CKSRYB223K50
	C3181	CKSRYB273K16
	C3090	CKSRYB332K50
	C3176	CKSRYB333K16
D	C3098, C3103, C3104, C3124, C3177	CKSRYB473K50
	C3179, C3183	CKSRYB473K50

RESISTORS

R3118, R3119	RD1/2VM151J
Other Resistors	RS1/16S□□□□J

OTHERS

CN3902	5P FFC Conector	52045-0545
CN5611, CN5701	13P FFC Connector	52045-1345
JA3001	6P Pin Jack	AKB7050
CN5612	11P Plug	AKP7058
CN5620	15P Plug	AKP7060
CN5613	21P Plug	AKP7063
CN5501, CN5502	23P Plug	AKP7064
X5701 (4.332MHz)		ASS7004
X5501 (10MHz)		ASS7034
CN5504	7P FFC Connector	HLEM7R-1
JA8602	Optical Input Jack	TORX179PL
KN5501, KN5791	Earth Metal Fitting	VNF1084

H TRADE2 ASSY

SEMICONDUCTORS

Q114	2SD2114K
Q115	DTA124EUA

RESISTORS

Other Resistors	RS1/16S□□□□J
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OTHERS

CN5511, CN5512	23P Socket	AKP7178
CN5521, CN5522	23P Socket	AKP7178

I TRADE3 ASSY

OTHERS

CN5614	11P Plug	AKP7058
CN5618	15P Plug	AKP7060
CN5615	21P Plug	AKP7063
CN5616	11P Socket	AKP7069
CN5619	15P Socket	AKP7071
CN5617	21P Socket	AKP7074

Mark No.	Description	Part No.
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J POWER ASSY

SEMICONDUCTORS

△ IC61	NJM7812FA
△ IC51	NJM78M56FA
Q42	2SA1576A
△ Q32	2SB1375
Q3601, Q3602, Q3611, Q3612	2SC4081
Q3621, Q3622, Q3631, Q3637, Q3638	2SC4081
Q3642, Q3644	2SC4081
Q3641, Q51	2SD1858X
Q41	2SD2114K
Q3635, Q3639	DTA124EUA
Q3645	DTA143EUA
Q3636, Q3640	DTC124EUA
Q3633	RN1901
Q3632	UMB1N
D35, D3632-D3634, D41	1SS133

D52-D54	1SS133
D103, D3601, D3602, D3611, D3612	1SS355
D3621, D3622, D3636, D3637	1SS355
D3641-D3643	1SS355
D11	D3SBA20(B)

△ D21, D22	D5SBA20(B)
D3635	DAN202K
D3644	DAN217
D3603, D3613, D3623	DAP202K
D33, D34	MTZJ18A
D3631	MTZJ5.1A
D36	MTZJ6.8B
△ D51	S1WB(A)60SD
D31, D32	S5688G

COILS AND FILTERS

△ L1	Line Filter	ATF7019
L3361, L3362, L3461, L3462, L3561		ATH-059
L3661	AF Choke Coil	ATH-059
L3701	Chip Beads	VTL1075

TRANSFORMERS

△ T2	Standby Transformer	ATT7078
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SWITCHES AND RELAYS

RY3641-RY3643	ASR7008
RY1	ASR7027

CAPACITORS

△ C1, C2 (0.022μF/AC250V)	ACE7022
△ C3 (10000P/AC250V)	ACG7033
C23, C24 (4700μF/35V)	ACH7166
C15, C16 (220μF/50V)	ACH7167
C25 (6800μF/25V)	ACH7168

C35, C3633	CEAT100M50
C52	CEAT102M25
C34, C41, C67	CEAT220M50
C32	CEAT221M63
C3631	CEAT2R2M50

C33	CEAT330M50
C54	CEAT470M16
C3632, C8821, C8831	CEAT471M6R3
C8861, C8871	CEATR10M50
C12, C13	CFTLA103J50

Mark No.	Description	Part No.
C53		CKSRYB103K50
C3361-C3364, C3461-C3464, C3561		CKSRYB223K50
C3563, C3661, C3663		CKSRYB223K50
C3365-C3368, C3465-C3468, C3565C		KSRYB473K50
C3567, C3665, C3667, C55-C57		CKSRYB473K50
C66		CKSRYB473K50
C3369, C3370, C3469, C3470		XCG3008
C3569, C3669	(0.1μF/100)	XCG3008

RESISTORS

R3607, R3608, R3617, R3618	ACN7112
R3627, R3628	(0.1Ω/2W) ACN7112
R11	RD1/2PMF100J
R3361, R3362, R3461, R3462, R3561	RD1/2PMF101J
R3661	RD1/2PMF101J
R31	RD1/2PMF332J
R36, R37	RD1/4PU101J
R3635	RD1/4PU332J
R35, R3631, R3632	RD1/4PU472J
R3365-R3368, R3465-R3468	RS1/10S220J
R3565, R3566, R3665, R3667	RS1/10S220J
Other Resistors	RS1/16S□□□J

OTHERS

3301, 3401	6-P Speaker Terminal	AKE7085
CN3031, CN3032	23P Plug	AKP7064
CN5531, CN5532	23P Plug	AKP7064
CN8802	4P Mini DIN Socket	AKP7179
H1-H4	Fuse Clip	AKR7001
CN11	10P VH Connector	B10P-VH
⚠ CN2	2P VH Side Connector	B2P3S-VH
	PCB Binder	VEF1040
JA8803	1P Pin Jack	VKB1122
CN8001	16P FFC Connector	VKN1247
CN5102	30P FFC Connector	VKN1261
CN8003	7P FFC Connector	VKN1267
KN1, KN11	Earth Metal Fitting	VNF1084
⚠ AN1	1P AC Inlet	XKP3041

K DISPLAY ASSY

SEMICONDUCTORS

IC5601	MSM9202-01
Q5691	2SC4081
D5931	MPG5064X

COILS AND FILTERS

L5563	LAU100J
L5562	LAU220J

SWITCHES AND RELAYS

S5921-S5927	ASG7013
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CAPACITORS

C5674	CCSRCH470J50
C5564	CEJQ101M6R3
C5679, C5680	CEJQ1R0M50
C5678	CEJQ220M35
C5953	CEJQ470M16
C5671-C5673	CKSRYB102K50
C5677	CKSRYB103K50
C5562, C5563, C5665, C5666, C5675	CKSRYB223K50
C5952	CKSRYB223K50
C5676 Varistor (1000pF±30%)	VCX1001

Mark No.	Description	Part No.
RESISTORS		
Other Resistors		RS1/16S□□□J
OTHERS		
CN5601	13P FFC Connector	52044-1345
V5601	FL Tube	AAV7089
5671	FL Spacer	AEB7069
5951	Remote Receiver Unit	GP1UM27XK

L TRADE1 ASSY

SEMICONDUCTORS

⚠ IC25	IC Protector (7A)	AEK7047
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RESISTORS

Other Resistors	RS1/16S□□□J
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OTHERS

CN3011, CN3012	23P Socket	AKP7178
CN3021, CN3022	23P Socket	AKP7178

M HP ASSY

SEMICONDUCTORS

Q3901, Q3902, Q3905, Q3906	2SD2114K
Q3903	DTA124EUA

COILS AND FILTERS

L3901, L3902	Chip Beads	VTL1096
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CAPACITORS

C3901, C3902	CKSRYB102K50
C3905	CKSRYB103K50
C3907	CKSRYB104K16
C3903, C3904	CKSRYB473K25

RESISTORS

R3901, R3902, R3911, R3912	RD1/4PU330J
Other Resistors	RS1/16S□□□J

OTHERS

CN3901	5P FFC Connector	52044-0545
3901	Mini Jack	AKN7026
KN3901	Earth Metal Fitting	VNF1084

6. ADJUSTMENT

6.1 DVD SECTION

6.1.1 ADJUSTMENT ITEMS AND LOCATION

■ Adjustment Items

[Mechanism Part]

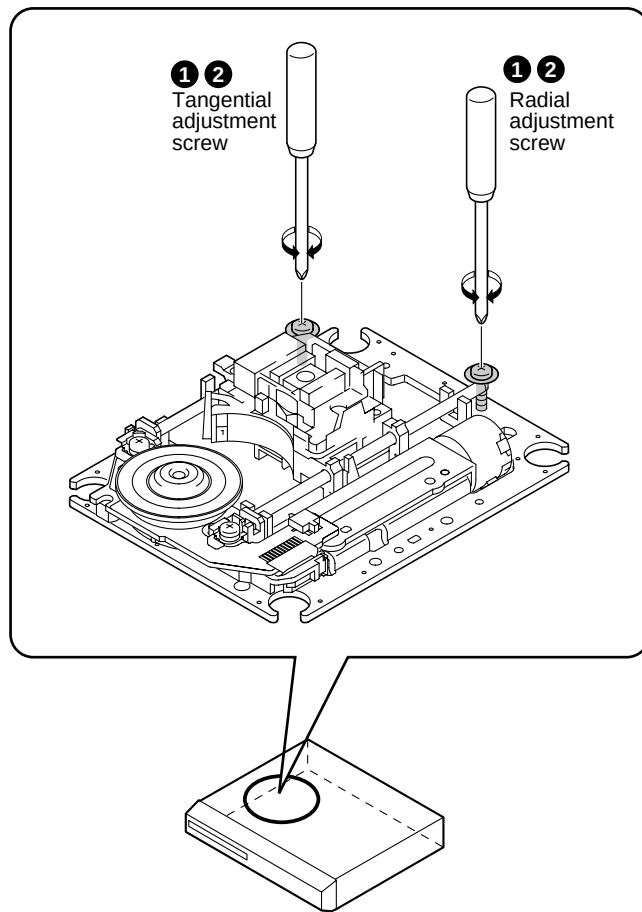
- ❶ Tangential and Radial Height Coarse Adjustment
- ❷ DVD Jitter Adjustment
- ❸ Initialization of the Focus Sweep Setting

[Electrical Part]

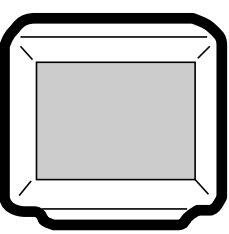
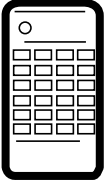
Electrical adjustments are not required.

■ Adjustment Points (Mechanism Part)

Cautions: After adjustment, adjustment screw locks with the Screw tight.



6.1.2 JIGS AND MEASURING INSTRUMENTS

 ⊕ Screwdriver (large)	 ⊕ Screwdriver (medium)	 TV monitor	 Test mode remote control unit (GGF1067)
 ⊕ Precise screwdriver	 DVD test disc (GGV1025)	 Screw tight (GYL1001)	

6.1.3 NECESSARY ADJUSTMENT POINTS

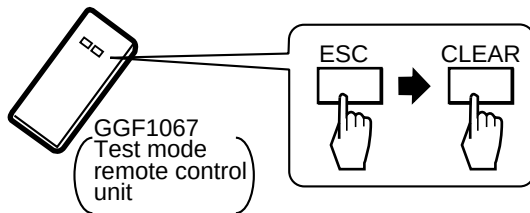
When	Adjustment Points
■ Exchange Parts of Mechanism Assy	
Exchange the Pickup	Mechanical point①, ②, ③* After adjustment, screw locks with the Screw tight. Electric point
Exchange the Traverse Mechanism	Mechanical point③ Electric point
Exchange the Spindle Motor	Mechanical point②, ③* After adjustment, screw locks with the Screw tight. Electric point

■ Exchange PCB Assy	
Exchange PC Board LOAB, DVDM and DVD IF ASSYS	Mechanical point Electric point

*

Purpose: To set the sweep which was correct with the individual Traverse mechanism.

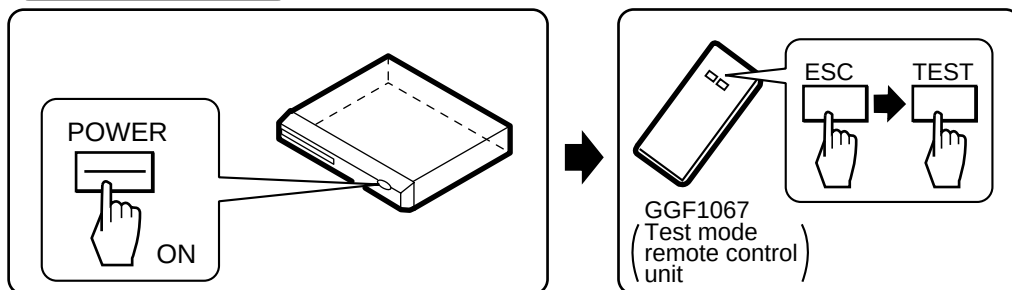
Be sure to perform the following step finally when replaced Pickup, Traverse Mechanism and Spindle Motor.



(It is necessary when performed adjustment procedure ②.)

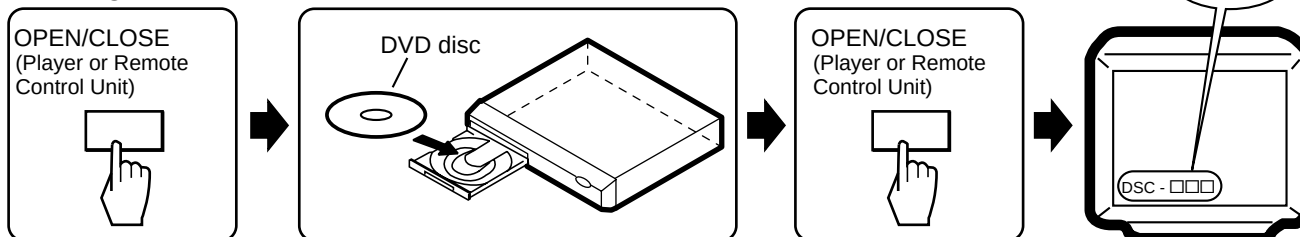
6.1.4 TEST MODE

TEST MODE: ON



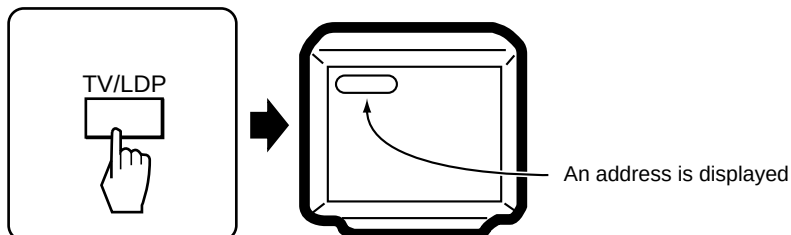
TEST MODE: DISC SET

<TRAY OPEN>



TEST MODE: PLAY

<PLAY>

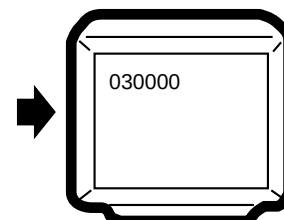


CAUTION:
Perform only trace, video and audio output are nothing.

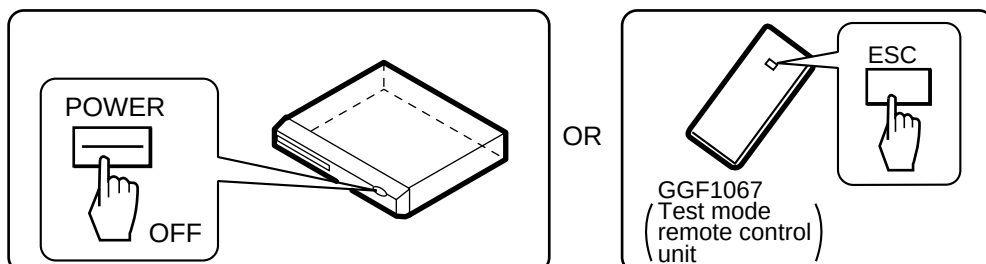
< When playback with the target address of disc (DVD)>

For example, when playback with # 30000

During PLAY **+10** → **3** → **0** → **0** → **0** → **0** → **CHP/TIM** Press keys in order



TEST MODE: OFF



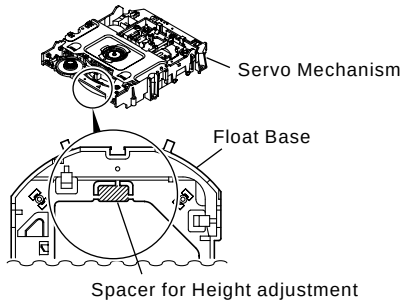
6.1.5 MECHANISM ADJUSTMENT



1 Tangential and Radial Height Coarse Adjustment

START

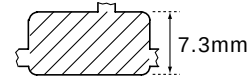
- Remove the servo mechanism.
- Remove a Spacer for height adjustment attached to the back side (shaded area) of the Servo Mechanism (Float Base) with nippers.



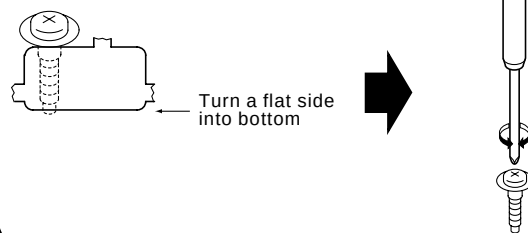
Note:
Turn the Short switch to Short side when removing the Pickup Flexible Cable.
(Refer to "7.1.6 DISASSEMBLY".)

Cautions:

Because there is not a Spacer for height adjustment in adjustment after the second time, will keep it at need.
(This parts is Traverse mechanism exclusive use of a model for 2001 years)



Put a spacer between a Tangential (or Radial) adjustment screw and Mechanism Base and turn each screw to adjust the height. (Refer to "6.1 ADJUSTMENT ITEMS AND LOCATION".)



2 DVD Jitter Adjustment

- Playback method of inner and outer address for the purpose is referred to "6.4 TEST MODE".
- Jitter indication of the monitor is referred to "7.1.1 TEST MODE (Display Specification of the Test Mode)".

Use disc: GGV1025

START

- Test mode
- Play the DVD test disc at outer track (around #200000)

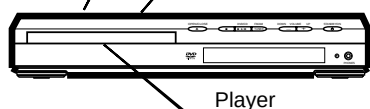
Mechanism Assy
Adjust the Tangential Adjustment Screw so that jitter becomes minimum.

J : Min

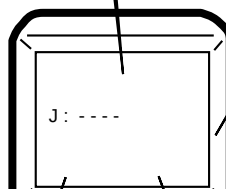
- Play the DVD test disc at inner track (around #300000)

Mechanism Assy
Adjust the Radial Adjustment Screw so that jitter becomes minimum.

J : Min



Player



Monitor

- Play the DVD test disc at outer track (around #200000)

Mechanism Assy
Readjust the Tangential Adjustment Screw so that jitter becomes minimum.

J : Min

Turn the POWER OFF in case of NG once, and perform the adjustment once again.

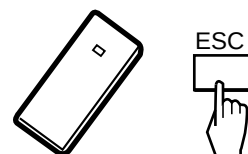
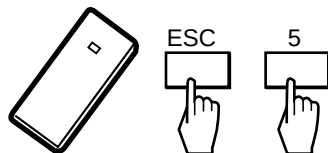
CHECK

Confirm the error rate that is displayed "OK"
(Example ERROR RATE: $6.60e-6$ OK)

If error rate is OK, locks a root of tangential and radial adjustment screws with the Screw tight, and go to step 3.

Screw tight: GYL1001

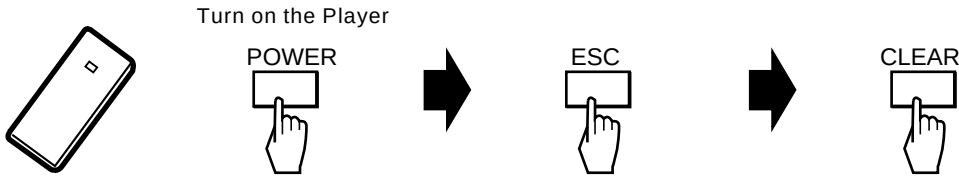
Disc playback normally.
• The measurement of block error rate



Test mode end

3 Initialization of the Focus Sweep Setting

Purpose: To set the sweep which was correct with the individual Traverse mechanism.



Note: Be sure to perform this step when replaced the Pickup or Traverse mechanism.

6.2 TUNER SECTION

■ AM Tuner Section

- There is no adjustment in the AM tuner.

■ FM Tuner Section

- Set the mode selector to FM BAND.
- Connect the wiring as shown in Fig. 1.

[ANT. INPUT SIGNAL]

- Frequency : 98 MHz
- Modulation : OFF
- Input Level : 80 dB μ V

Step No.	Adjustment Title	Adjustment point	Measurement point	Adjustment value	Adjustment State
1	T-METER Adjustment	L201	IC201 Pin 21/Pin23	$0 \pm 50\text{mV}$	Adjust L201 so that the DC voltage between Pin 21 and Pin 23 of IC201 (Test point "Vtm") gets within $0 \pm 50\text{mV}$.

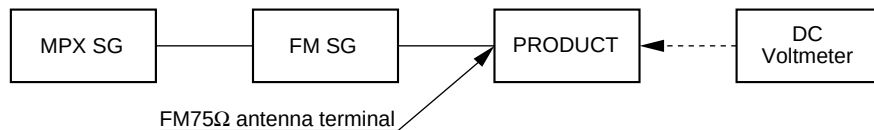
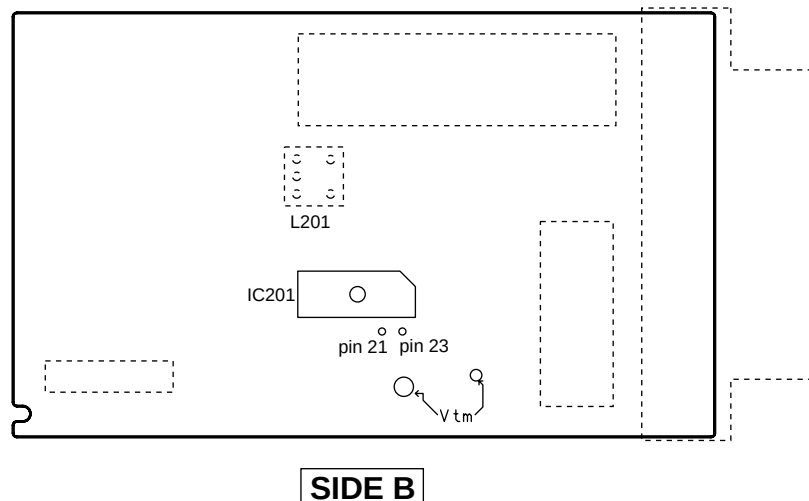


Fig.1 Adjustment Wiring Diagram

E FM/AM TUNER MODULE



7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 TEST MODE

■ Test Mode Functional Specification

① Test mode entry

In the power ON state, press the [ESC] (A8-5F) key and [TEST / RANDOM] (A8-5E) key in order of the LD remote control unit.

- Light the all LCD and LEDs, and goes out the LCD and LEDs when pressing the keys of something.
- OSD displays test mode. Refer to the "Display Specification of the Test Mode".

② Release the Test mode

- Turn off the power.
- Press the [ESC] (A8-5F) key of the remote control unit and reset it.

③ Tray open / close

- Press the [REPEAT A-B] (A8 - 48) key of the remote control unit.
- Press the [OPEN / CLOSE] key of the main unit from the stop state.

④ Playback stop

- Press the [REPEAT] (A8 - 44) key of the remote control unit from the playback state.

⑤ LD ON

DVD : Press the [TEST] (A8-5E) and [1] (A8-01) keys in order, and turn on the laser diode (650n).

CD : Press the [TEST] (A8-5E) and [4] (A8-04) keys in order, and turn on the laser diode (780n).

⑥ Focus on / sweep

1. Lock the focus by pressing the [TEST] (A8-5E) and [2] (A8-02) keys in order.
2. Repeat focus sweep by pressing the [TEST] (A8-5E) and [3] (A8-03) keys in order.

⑦ Spindle FG servo

CAV : Press the [TEST] (A8-5E) and [5] (A8-05) keys in order, then rise up the spindle and it becomes FG servo on.

CLV : Press the [TEST] (A8-5E) and [9] (A8-09) keys in order, then rise up the spindle and it becomes FG servo on.

⑧ Tracking open / close

1. Open tracking by pressing the [STEP FWD] (A8-54) key of the remote control unit in the play state.
2. Close tracking by pressing the [STEP REV] (A8-50) key of the remote control unit in the play state.

⑨ Slider servo on/off

1. Turn on the slider servo by pressing the [TEST] (A8-5E) and [CX] (A8-0E) keys in order.
2. Turn off the slider servo by pressing the [TEST] (A8-5E) and [TV/LDP] (A8-0F) keys in order.

⑩ Slider in / out

Slider in : In the tracking off state, press the [SCAN REV] (A8-11) key of the remote control unit.

Slider out : In the tracking off state, press the [SCAN FWD] (A8-10) key of the remote control unit.

⑪ Play (perform only the ID search and trace to the specified location)

Press the [TV/LDP] (A8-0F) key of the remote control unit from the stop state.

Perform only trace, video and audio output are nothing.

⑫ Screen display ON/OFF

1. Turn off the display by pressing the [AUDIO] (A8-1E) key of the remote control unit.
2. Turn on the display by pressing the [DISPLAY] (A8-43) key of the remote control unit.

⑬ Search

1. Search address input entry

- It becomes the address input mode when pressing the [+10] (A8-1F) key. (Most significant digit of an address displays ">".)
- In this time, display the last address as the initial state.

2. Search address input

- Press the [0] to [9] (A8-00 to 09) keys of the remote control unit. In the DVD, set an address with hexadecimal.
- In the address input mode, turn to the hexadecimal input by pressing the [PROGRAM] (A8-4C) key (display a "*" mark), and [1] to [6] keys are each input as A to F.
- In this time, do not accept the [7],[8],[9] and [0] keys. Hexadecimal input and decimal input can switch with toggle.
- In case of CD, perform only the absolute time search.

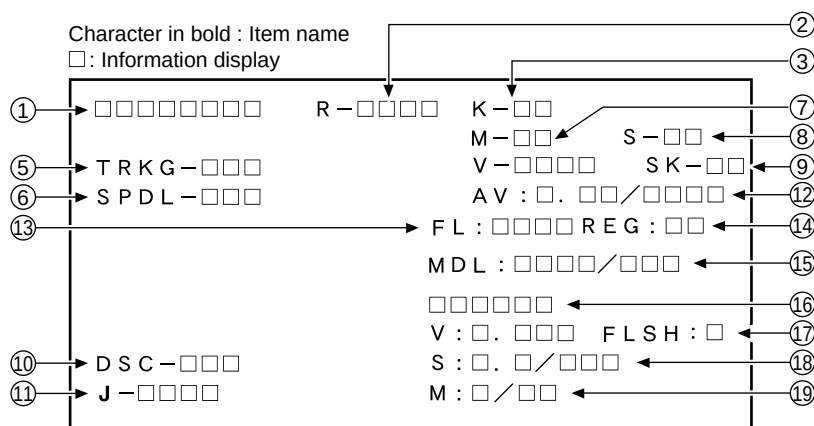
3. Search execution

- Press the [CHP/TM] (A8-13) key of the remote control unit.
- After the search, perform only trace and video and audio outputs are nothing.

4. Release the Search address input

- Clear the address by pressing the [CLEAR] (A8-45) key. Release the address input mode when pressing the [CLEAR] key once again.

Display Specification of the Test Mode



① Address indication

The address being traced is displayed in number.
(as for the DVD, indication of decimal number is possible.)
DVD : ID indication (hexadecimal number, 8 digits)

[*****]

CD : A-TIME (min. sec.) [0 0 0 0 *****]

② Code indication of remote control unit [R - *****]

In case of double code, display a 2nd code.

③ Main unit keycode indication [K - **]

⑤ Tracking status [TRKG - ***]

Tracking on : [ON]

Tracking off : [OFF]

⑥ Spindle status [SPDL - ***]

[OFF], [A/B] (ACC/BRK), [CAV], [CLV]

⑦ Mechanism (loading) position value [M - **]

Unknown : [01] or [41]

Open state : [04]

Close state : [08]

During opening : [12]

During closing : [22]

⑧ Slider position [S - *****]

CD TOC area : [IN]

CD active area : [CD]

⑨ Output video system [V - *****]

NTSC system : [NTSC]

PAL system : [PAL]

Automatic setting : [AUTO]

Scart terminal output [SK - **]

(Display only the WY model which can do the output setting of scart terminal.)

VIDEO : [00]

S-VIDEO : [01]

RGB : [02]

⑩ Disc sensing [DSC - ***]

The type of discs loaded is displayed.

[DVD], [CD], [VCD], []

⑪ Jitter value [J - *****]

⑫ Version of the AV-1 chip / version of firmware

[AV: ** / *****]

⑬ Version of the FL controller [FL: *****]

⑭ Region setting of the player [REG: *]

Setting value : [1] to [6]

⑮ Destination setting of the FL controller

[MDL: ***** / *****]

Four characters in the front represent the type of model.

Three characters in the back represent the destination code.

J: /J, K: /KU, /KC, /KU/KC, R: /RAM/RL/RD, LB: /LB,

WY: /WY

⑯ Part number of the flash ROM

[*****]

⑰ Version of the flash ROM [V: *, **]

Flash ROM size [FLSH = *]

⑱ Revision of the system controller [S: *, * / *****]

⑲ Revision of the DVD mechanism controller

[M: * / **]

Shortcut key Functional Specification

Only in the normal playback, the following setting can be pressed the required key after having pressed the "ESC" key of the remote control unit. How to release: Press the "ESC" key. (function with indication)

Command Contents	Conditions	Remote Control Key Name	Remote Control Code
Memory clear & region / revision indication		CLEAR (LD remote control unit)	A8-45
Average value measurement of DVD error rate		5 (LD remote control unit)	A8-05
CD error rate measurement		5 (LD remote control unit)	A8-05
Aspect: Pan scan		2	A6-01
Aspect: Letter box		3	A6-02
Aspect: Wide		4	A6-03
Digital: PCM		5	A6-04
Digital: AC-3/PCM		6	A6-05
Virtual Dolby: VDD=OFF	Only correspondence model	7	A6-06
Virtual Dolby: VDD=ON	Only correspondence model	8	A6-07
Digital output ON		REPEAT A	A6-A1, AF-E8
Digital output OFF		REPEAT B	A6-95
DTS Digital Out ON		STEP FWD	A6-A1, AF-B7
DTS Digital Out OFF		STEP REV	A6-A1, AF-B8
Scart terminal output: VIDEO	WY, Model to include scart	AUDIO	A6-A1, AF-BE
Scart terminal output: S-VIDEO	WY, Model to include scart	SUBTITLE	A6-A1, AF-36
Scart terminal output: RGB	WY, Model to include scart	ANGLE	A6-A1, AF-B5
Audio 5.1CH ON	Only correspondence model	KD_ENTER	A6-74
FL indication of EDC / ID error		CX (LD remote control unit)	A8-0E
ZOOM ON	Only correspondence model	ZOOM	A6-A1, AF-37
ZOOM OFF	Only correspondence model	< X3 (LD remote control unit)	A8-59
Service mode indication (error rate indication, etc.)		CHP/TIM (LD remote control unit)	A8-13
Model information indication		CHAP (LD remote control unit)	A8-40
Background color change		+10 (LD remote control unit)	A8-1F
Audio last stage mute ON		9	A6-08
Audio last stage mute OFF		0	A6-09
Title search Input mode IN Title No. input Search execution		SIDE A (LD remote control unit) Numbers (LD remote control unit) PLAY (LD remote control unit)	A8-4D A8-00 to A8-09 A8-17
Region confirmation mode		AUDIO (LD remote control unit) Numbers (LD remote control unit)	A8-1E A8-01 to A8-08

• Service mode indication

ID Address

Always display error rate. Exponential indication $***e-*$ (with both DVD and CD)

EDC/ID/AV1 error history (ID Address, EDC/ID/AV1 Error, errors of past eight times)

Self-diagnostic function (when mechanism error occurred, display the mechanism error history)

• Error rate average value total (ESC +5)

Calculation number of times displays exponent from average value of eight times.

After the calculation result, display OK/NG. Tray is open in case of NG (with both DVD and CD)

DVD: OK with less than $8.0e-4$ CD: OK with less than $7.6e-4$

Note: Because an OK/NG judgment cannot be DVD with a static image mode as menu screen, confirm it by an animation.

• Model information indication contents (ESC+CHAP)

Display 12 to 19 in the test mode indication. However, Change the indication of S as B.E VERSION and it of M as F.E VERSION.

Refer to the "Specification of Model Information Display".

• Background color change (ESC+ +10)

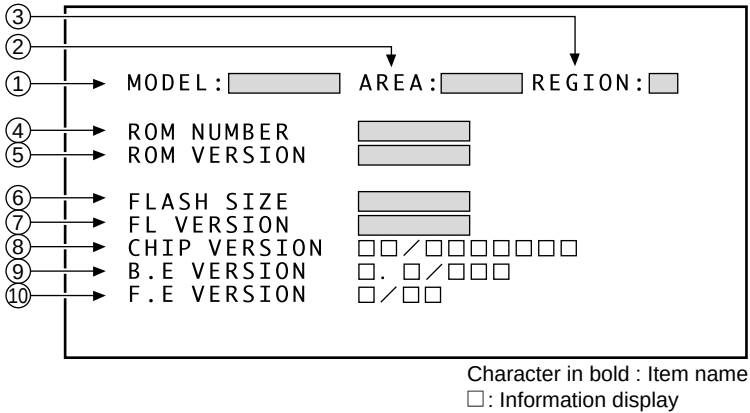
Change black and green with toggle whenever pressing the key (the background color that green is using with SETUP NAVIGATOR).

• Region confirmation mode (ESC+ A.MON + 1to 8)

Input region No. after pressing the ESC+A.MON keys. When it is different from the setting, display and open the tray.

Specification of Model Information Display

• Display contents



- ① **Model name**
Display it according to model information set from the FL controller.
- ② **Destination indication**
Display it according to model information set from the FL controller.
- ③ **Region No.**
- ④ **Part number**
- ⑤ **ROM version**
- ⑥ **Flash size**
- ⑦ **FL controller version**
- ⑧ **CHIP VERSION**
Version of ST CHIP
CUT ID / JTAG ID
↑ ↑
(two columns) (eight columns)
- ⑨ **B.E VERSION**
Version of BACK END (version of ST core software)
 . /
softwareVersion . softwareRevision / buildNumber
- ⑩ **F.E VERSION**
Version of FRONT END (version of mechanism controller CHIP software)
 /
MainVersion / SubVersion

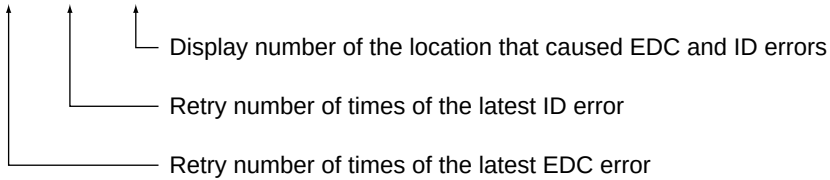
Functional Specification of the Service Mode

• FL indication of EDC / ID error (short cut function)

Display it in FL with ESC+CX keys (LD remote control unit).
Indication is released with ESC key during indication.

FL indication contents

0 0 / 0 0 / 0 1 *



* mark: When even once causes AV1 error, lights.

• Service mode screen display

Display to the screen with ESC+CHP/TIM keys.
Release the indication with ESC key.

Indication contents

ID Address ①

Always indicate error rate ② and exponent indication

EDC/ID/AV1 error history (ID Address, EDC/ID/AV1 Error, past eight times) ③

Contents of AV1 error

BIT 0: EDC error, FEC I/F buffer overflow and not valid occur in the BE code (B.E error).

BIT 1: ID is different from the target in the BE code (B.E error).

BIT 2: There is error in the EDC data of 2 bytes which added to the FE (F.E error).

• Self-diagnostic function ④

Check that the F.E is normal or not.

FE OK : Abnormality is not found in the F.E.

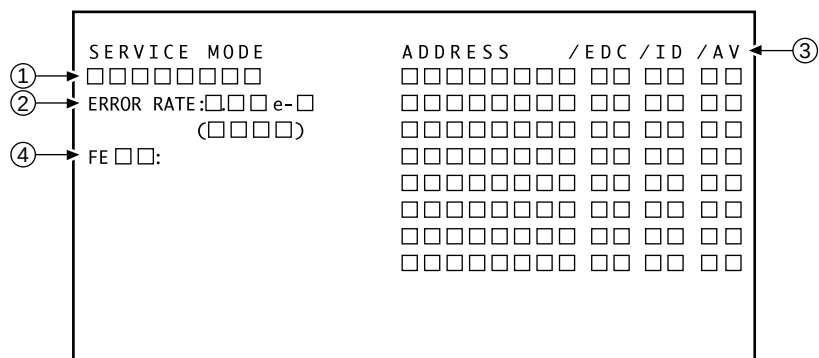
FE Error : Abnormality is found in the F.E.

Indicate the mechanism error history by pressing the CHP/TIM key once again.

Change indication by pressing the CHP/TIM key with toggle afterwards.

Refer to the "Display of the Mechanism Error History".

Indication plan contents



Character in bold : Item name
□: Information display

7.1.2 DISPLAY OF THE MECHANISM ERROR HISTORY

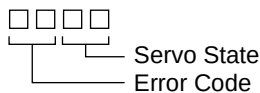
When mechanism error (FE error) occurred, the mechanism error history of maximum past eight times is displayed by pressing the CHP/TIM key during service mode screen display.

Indication displayed in the screen upper part is new error.

• Indication contents

① Error code

Two characters in the front represent the Error Code and two characters in the back represent the Servo State. The detail is as follows.



② Error occurrence time

Error indicates the time which occurred after system turned on the power supply.

* When time of new error is short, it becomes assumed power off once.

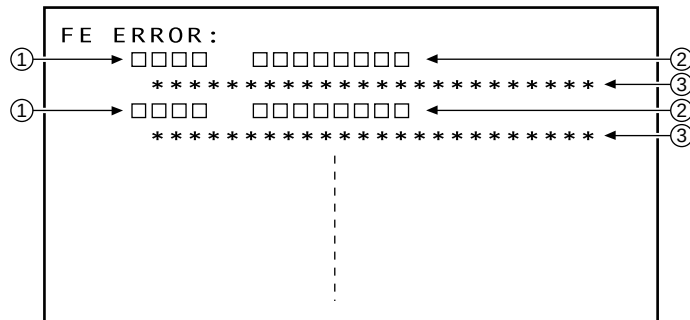
③ Error contents indication

Indicate the error contents which occurred with character.

Examples: When Error code is 0x13 (Focus lost timeout) and error state is 0x05 (Disc judge), "Focus lost timeout in Disc judge"

* Movement in the error occurrence: open the tray when SERVO STATE is Disc Judg, and others stop. However, error code is exception in the device error of 0xd*.

Indication contents



• Table of Error Code

FOCUS ERROR	0x0*	FOCUS TIMEOUT	0x1*
Focus on error	0x01	Focus on timeout	0x11
Focus off error	0x02	Focus off timeout	0x12
Focus lost error	0x03	Focus lost timeout	0x13
Focus balance adjust error	0x04	Focus balance adjust timeout	0x14
Focus gain adjust error	0x05	Focus gain adjust timeout	0x15
Focus sweep error	0x06	Focus sweep timeout	0x16
Focus reflection error	0x07	Focus reflection timeout	0x17
TRACKING ERROR	0x2*	TRACKING TIMEOUT	0x3*
Tracking on error	0x21	Tracking on timeout	0x31
Tracking off error	0x22	Tracking off timeout	0x32
Tracking lost error	0x23	Tracking lost timeout	0x33
Tracking balance adjust error	0x24	Tracking balance adjust timeout	0x34
Tracking gain adjust error	0x25	Tracking gain adjust timeout	0x35
Tracking jump error	0x26	Tracking jump timeout	0x36
STEPPING ERROR	0x4*	STEPPING TIMEOUT	0x5*
Stepping on error	0x41	Stepping on timeout	0x51
Stepping off error	0x42	Stepping off timeout	0x52
Stepping lost error	0x43	Stepping lost timeout	0x53
Stepping move error	0x44	Stepping move timeout	0x54
SPINDLE ERROR	0x6*	SPINDLE TIMEOUT	0x7*
Spindle on error	0x61	Spindle on timeout	0x71
Spindle off error	0x62	Spindle off timeout	0x72
Spindle lost error	0x63	Spindle lost timeout	0x73
Spindle CAV error	0x64	Spindle CAV timeout	0x74
Spindle CLV error	0x65	Spindle CLV timeout	0x75
ACQUISITION ERROR	0x8*	ACQUISITION TIMEOUT	0x9*
PLL lost error	0x83	PLL lost timeout	0x93
DECODER ERROR	0xa*	DECODER TIMEOUT	0xb*
ID lost error	0xa3	ID lost timeout	0xb3
DEVICE ERROR	0xd*	FAIL SAFE	0xe*
SRAM error	0xd1	unexpected error	0xe1

• Table of Servo State

0x00	Reset
0x01	Stop (inside position)
0x02	Stop (any position)
0x03	Braking for stop
0x04	New disc
0x05	Disc judge
0x06	Reserved 1
0x07	Playing
0x08	Start up
0x09	Seeking
0x0A	Pausing
0x0B	Reading BCA
0x0C	Reserved 2
0x0D	
0x0E	
0x0F	

ERROR CODE TABLE

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
FOCUS ERROR (0 x 0*)					
Focus on error	0 x 01	Focus on could not be completed	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. L6315 (Front End IC)	
Focus off error	0 x 02	Focus off could not be completed	Unknown		
Focus lost error	0 x 03	Focus servo is lost	Are not there a dirt or a scratch in the Disc? Does LD become weak?	1. Pickup	
Focus balance adjust error	0 x 04	AFB on could not be completed			
Focus gain adjust error	0 x 05	Focus AGC could not be completed			
Focus sweep error	0 x 06				
Focus reflection error	0 x 07	Dimensions of S curve did not reach to the aim value	Does LD become weak?	1. Pickup	
FOCUS TIMEOUT (0 x 1*)					
Focus on timeout	0 x 11	Did timeout at focus on	Are not there a dirt or a scratch in the Disc? Does LD become weak? Does the lens move up and down?	1. Pickup 2. Driver 3. L6315 (Front End IC)	
Focus off timeout	0 x 12	Did timeout at focus off			
Focus lost timeout	0 x 13	Did timeout at focus backup			
Focus balance adjust timeout	0 x 14	Did timeout at AFB			
Focus gain adjust timeout	0 x 15	Did timeout at AGC			
Focus sweep timeout	0 x 16				
TRACKING ERROR (0 x 2*)					
Tracking on error	0 x 21	Tracking on could not be completed		1. Pickup 2. Driver 3. L6315 (Front End IC)	
Tracking off error	0 x 22	Tracking off could not be completed			
Tracking lost error	0 x 23	Tracking servo is lost		1. Pickup	
Tracking balance adjust error	0 x 24	ATB could not be completed		1. Pickup	
Tracking gain adjust error	0 x 25	AGC could not be completed		1. Pickup	
Tracking jump error	0 x 26	Tracking jump could not be completed			
TRACKING TIMEOUT (0 x 3*)					
Tracking on timeout	0 x 31	Did timeout at tracking on	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. Driver 3. L6315 (Front End IC)	
Tracking off timeout	0 x 32	Did timeout at tracking off			
Tracking lost timeout	0 x 33	Did timeout at tracking backup	Are not there a dirt or a scratch in the Disc?	1. Pickup	
Tracking balance adjust timeout	0 x 34	Did timeout at ATB		1. Pickup	
Tracking gain adjust timeout	0 x 35	Did timeout at AGC		1. Pickup	
Tracking jump timeout	0 x 36	Did timeout at tracking jump			
STEPPING ERROR (0 x 4*)					
Stepping on error	0 x 41	Stepping on could not be completed		1. Pickup 2. Driver 3. L6315 (Front End IC)	
Stepping off error	0 x 42	Stepping off could not be completed			
Stepping lost error	0 x 43	Stepping servo is lost			
Stepping move error	0 x 44	Stepping could not move	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	
STEPPING TIMEOUT (0 x 5*)					
Stepping on timeout	0 x 51	Did timeout at stepping on		1. Pickup 2. Driver 3. L6315 (Front End IC)	
Stepping off timeout	0 x 52	Did timeout at stepping off			
Stepping lost timeout	0 x 53	Did timeout at stepping backup			
Stepping move timeout	0 x 54	Did timeout at stepping movement	Do move to inner and outer periphery of the stepping in the test mode? Do indicate "S-04" at the most inner periphery of the stepping?	1. Stepping motor 2. Inside switch 3. Driver	

Error Name	No.	Causes	Check Item	Possibility of Trouble	Remarks
SPINDLE ERROR (0 x 6*)					
Spindle on error	0 x 61	Spindle on could not be completed			
Spindle off error	0 x 62	Spindle off could not be completed			
Spindle lost error	0 x 63	Spindle lost control			
Spindle CAV error	0 x 64	CAV on could not be completed			
Spindle CLV error	0 x 65	CLV on could not be completed			
SPINDLE TIMEOUT (0 x 7*)					
Spindle on timeout	0 x 71	Did timeout at spindle on			
Spindle off timeout	0 x 72	Did timeout at spindle stop			
Spindle lost timeout	0 x 73	Did timeout at spindle backup	Are not there a dirt or a scratch in the Disc? Is FG output from the driver?	1. Spindle motor 2. Spindle driver	
Spindle CAV timeout	0 x 74	Did timeout at CAV on	Is spindle rotating? Is FG output from the driver? Is the PDM output from L6315?	1. Spindle motor 2. Spindle driver 3. L6315 (Front End IC)	
Spindle CLV timeout	0 x 75	Did timeout at CLV on			
ACQUISITION ERROR (0 x 8*)					
PLL lost error	0 x 83	PLL is lost	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. L6315 (Front End IC)	
ACQUISITION TIMEOUT (0 x 9*)					
PLL lost timeout	0 x 93	Did timeout at PLL backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. L6315 (Front End IC)	
DECODER ERROR (0 x a*)					
ID lost error	0 x a3	ID is not readable	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. L6315 (Front End IC)	
DECODER TIMEOUT (0 x b*)					
ID lost timeout	0xb3	Did timeout at ID backup	Are not there a dirt or a scratch in the Disc?	1. Pickup 2. L6315 (Front End IC)	
DEVICE ERROR (0 x d*)					
SRAM error	0 x d1	Cannot access SRAM	Power supply of SRAM Is not bus line short-circuiting?	1. SRAM 2. L6315 (Front End IC) 3. L6315-SRAM bus line	
FAILSAFE (0 x e*)					
Unexpected error	0 x e1	Unexpected error		1. software runaway 3. Software bug	

7.1.3 TROUBLE SHOOTING

Confirm the error history at first. (Refer to the "7.1.2 DISPLAY OF THE MECHANISM ERROR HISTORY")
When a history was not displayed, refer to the following table.

No.	Symptoms	Diagnosis Contents	Defectiveness Assumption Points
1	An opening screen is not displayed by a monitor (LCD turns on. A mecha does not work.)	Are resonators (X601 and X301) on the DVDM Assy oscillating ?	Crystal resonator (27MHz, 20MHz)
		Refer to contents of a FE error displayed by FL display. (SRAM defectiveness, I2C communication line defectiveness, etc.)	FRONT END IC (DVDM IC301)
		- Is a signal input into IC603-pin 26 (CE3) on the DVDM Assy immediately after the power on ? [L ↔ H] → Communication with flash ROM - Are the signals input into IC604-pin 16 (SMIWE), pin 19 (SMICS0) and pin 38 (SMICLK) on the DVDM Assy ? [L ↔ H] → Communication with flash ROM	BACK END IC (DVDM IC601)
		Is a signal output from IC603-pin 28 (CPU_OE) on the DVDM Assy immediately after the power on ? [L ↔ H]	Flash ROM (DVDM IC603)
2	An opening screen is not displayed on the monitor (LCD turns on. A mecha works.)	Check the video signal path between BACK END IC (DVDM IC601) and video-out terminal (cf. block diagram)	The video circuit after BACK END

Continues to next page.

A

No.	Symptoms	Diagnosis Contents	Defectiveness Assumption Points
3	Cannot open a tray (An opening screen is displayed on the monitor)	Does voltage of CN9-pin 3 and 5 on the DVDM Assy change normally ? pin 3 (XCLOSE) : It is "H" level by the state that has finished doing CLOSE. pin 5 (OPEN) : It is "H" level by the state that has finished doing OPEN.	Tray switch
		Does LOAD_DRV signal come ?	BACK END IC (DVDM IC601)
		Is a signal output from IC351-pin 14 and 15 (CN9-pin 1 and 2) on the DVDM Assy ? (pin 15 : It is about 6V during tray opening, It is about 0V during tray closing) (pin 14 : It is about 0V during tray opening, It is about 6V during tray closing)	FTS Driver IC (DVDM IC351)
		Are not there wire rod coming out, damage the connectors of CN9 and CN5 on the DVDM Assy ?	Connector / wire rod
		Does voltage of CN5-pin 1 on the DVDM Assy change when pressed the inside switch ?	Inside switch
4	Cannot playback (Focus does not inn)	Are the signals output from IC351-pin 9 and 10 on the DVDM Assy ?	FTS Driver IC (DVDM IC351)
		Does 650 LD emit light ? Does a pickup lens do up / down ? Does not an actuator spring bend ?	Pickup
		Are not resin part damage, a shaft missing ? Are not there falling off of turn table, lean abnormality ?	Mechanism Assy
		Is not flexible cable of CN7 on the DVDM Assy coming off and damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 123 (FACT) on the DVDM Assy ? (Device control of around 500 mV is output usually. It is $\pm$ around 100 mV swing by focus up / down.)	FRONT END IC (DVDM IC301)
5	Cannot playback (Spindle does not turn)	Are the signals output from IC251-pin 2 (A3), pin 4 (A2) and pin 7 (A1) on the DVDM Assy ? It is fixed, and is not there pin 18 HIGH whether it is fixed, and there is not pin 23 LOW ?	Spindle Driver IC (DVDM IC251)
		Are not there part falling off, alien substance adhesion in spindle motor part ?	Mechanism Assy (Spindle motor)
		Is not flexible cable of CN7 on the DVDM Assy coming off and damaged ?	Flexible cable / connector
		Is signal output from IC301-pin 123 (SPDL_PDM) on the DVDM Assy ?	FRONT END IC (DVDM IC301)
6	Cannot playback (Playback stops)	Does not 650nm LD deteriorate ? If there is the both ends voltage of R121 on the DVDM Assy more than 0.7V, 650nm LD deteriorates surely.	650nm LD deteriorates. (Cannot playback DVD)
		Does not 780nm LD deteriorate ? If there is the both ends voltage of R123 on the DVDM Assy more than 1.2V, 780nm LD deteriorates surely.	780nm LD deteriorates. (Cannot playback CD)
		Is not there abnormality in FG waveform ?	FG output : Spindle Driver IC (DVDM IC251)
		Are not there scratch and a dirt on the disc ?	Disc
7	Picture disturbance during playback (block noise, freeze, other)	Are not there scratch and a dirt on the disc ? Do not you set a disc of standard outside ?	Disc
8	Audio is not output (Picture is normal)	Check the waveform (BCK, LRCK, MCLK, DATA).	BACK END IC (DVDM IC601)
		Is signal output from IC1921-pin 7 and 8 on the DVD IF Assy ?	AUDIO DAC IC (DVD IF IC1921)

E

D

C

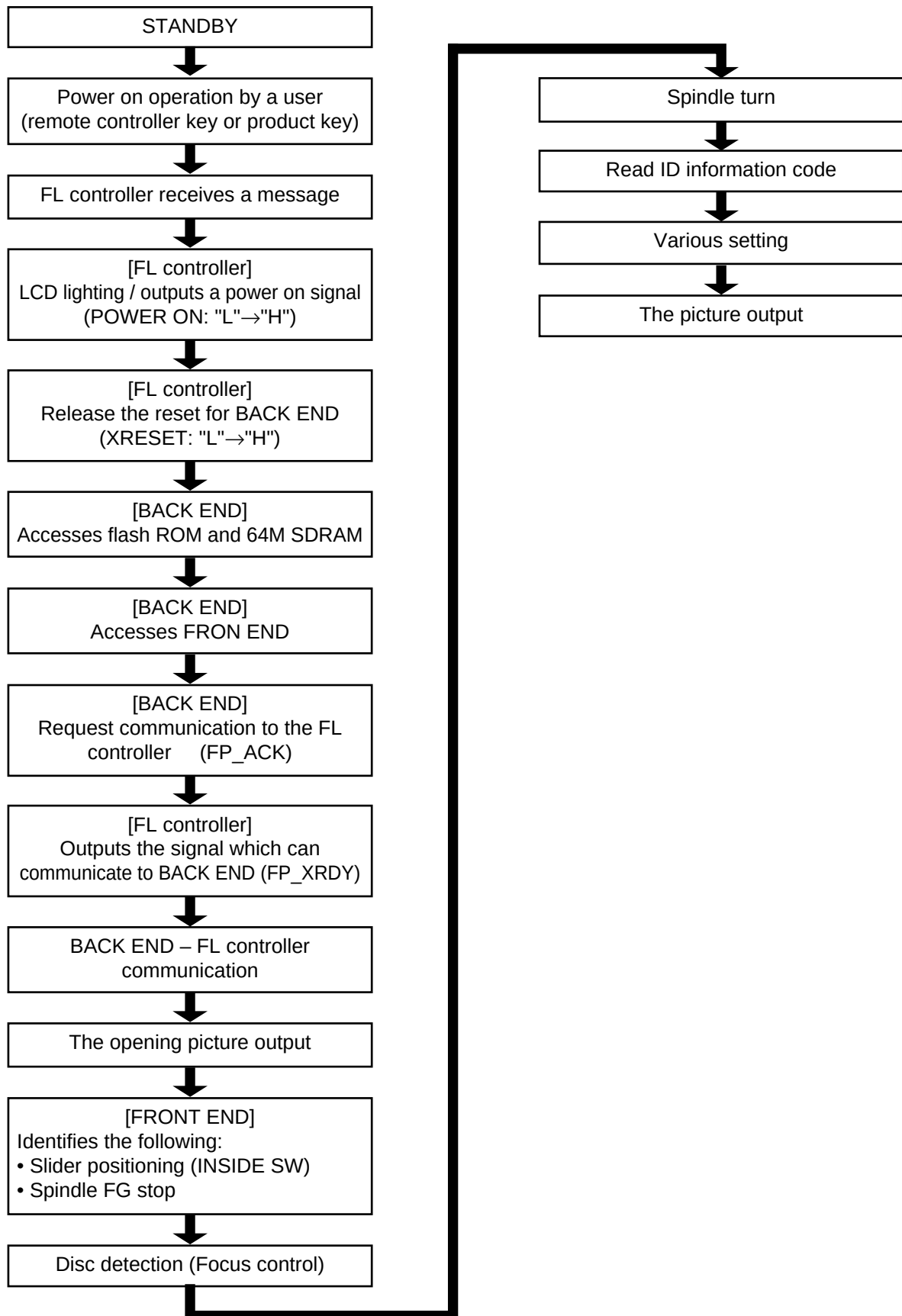
B

A

F

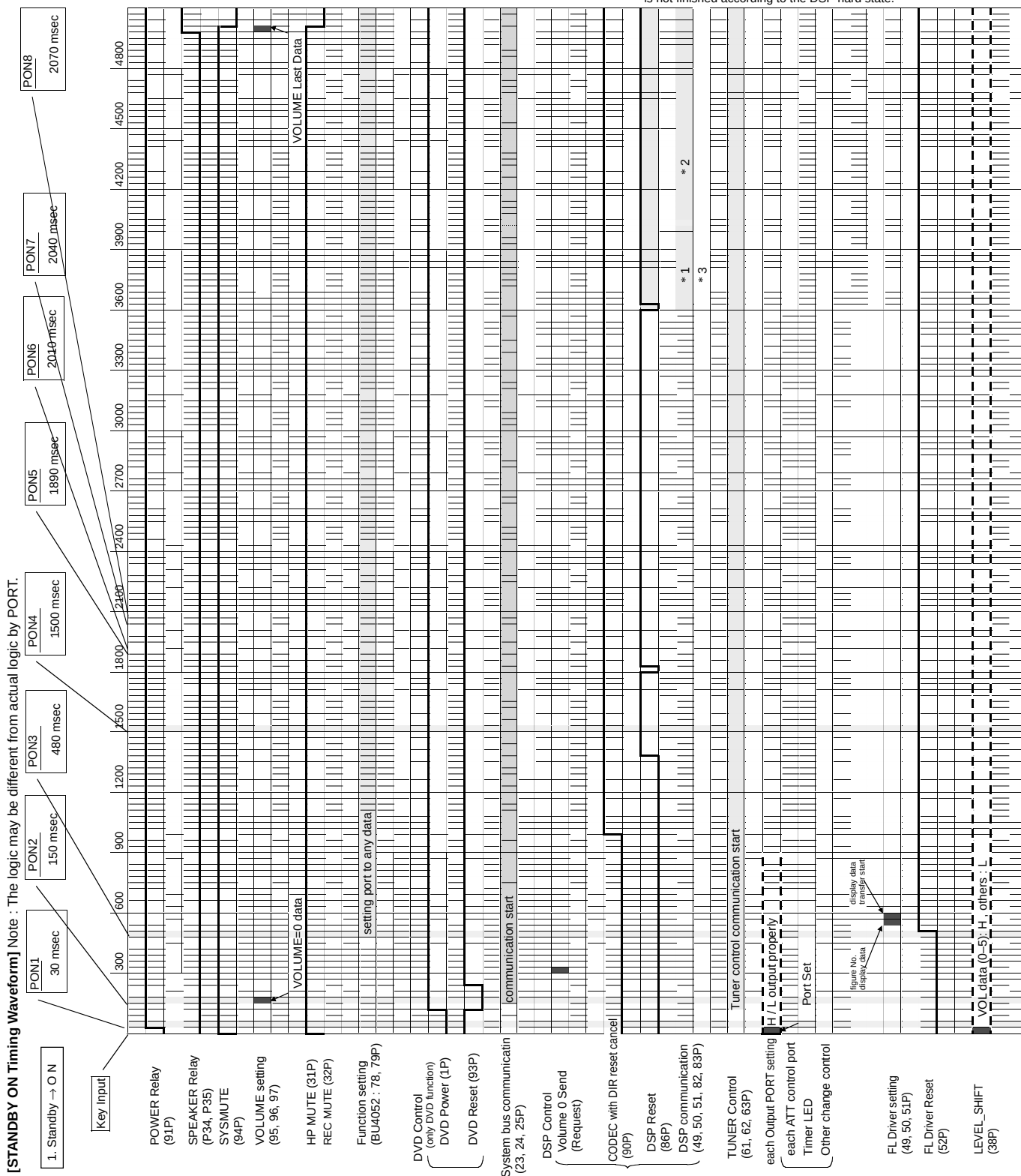
7.1.4 SEQUENCE AFTER POWER ON

Flow chart from power on to the picture output



[SEQUENCE TIMING CHART]

- * 1 DSP initialization communication
- * 2 Move to normal communication directly when the initialization communication is finished.
- * 3 Not cancel MUTE when the initialization communication is not finished according to the DSP hard state.



[SEQUENCE TIMING TABLE]

Function Name	Setting Time from the Former Step	Passing Time	Control Detail
SY_PON 0	-- --	0 msec	POWER ON start Each Initial Setting ^① Mask to All Keys. Mask to Normal Key. POWER line MUTE ON(one of System Mute Request) MUTING FLAG Clear Emergency POWER OFF FLAG Clear FL Driver SATND-BY POWER ON RAM Initalize
SY_PON 1	+ 30 msec	30 msec	Each Initial Setting ^② SYSTEM POWER ON (Pin 91 : H) Request "HELLO" display at POWER ON (3.5sec)
SY_PON 2	+ 120 msec	150 msec	Each Initial Setting ^③ Request VOL DATA Trasfer BUS communication Start
SY_PON 3	+ 330 msec	480 msec	Each Initial Setting ^④ FL Driver POWER ON Start Function Setting (BU4502) Process
SY_PON 4	+ 1020 msec	1500 msec	Each Initial Setting ^④
SY_PON 5	+ 390 msec	1890 msec	Each Initial Setting ^⑤
SY_PON 6	+ 120 msec	2010 msec	Each Initial Setting ^⑥
SY_PON 7	+ 30 msec	2040 msec	Each Initial Setting ^⑦ Cancel Mask to All Key Cancel Mask to Normal Key Cancel POWER Line MUTE (One of System Mute Request)
SY_PON 8	+ 30 msec	2070 msec	POWER ON finished

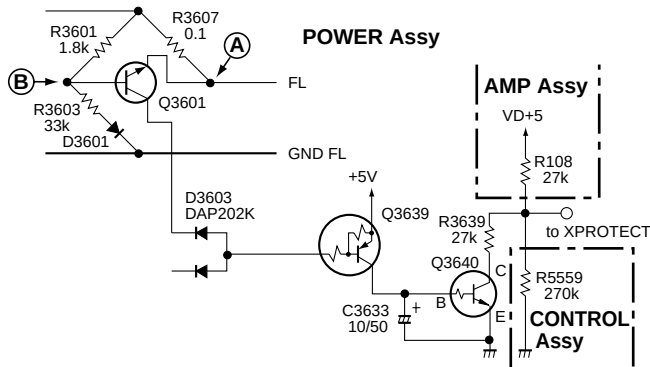
7.1.5 PROTECTION CIRCUIT

Note: • Check the Protection Circuit when the GREEN LED of DISPLAY ASSY blinks.

- When the protection circuit operates, even if the AC plug is pulled out and plugged in again, the unit will be reset for 60 seconds.

- Refer to the Schematic Diagram about the actual circuit.
(The □ number corresponds to the ■ marked circuits.)

1 Protection Circuit when the SP terminal is overload



At normal state, Q3601 does not operate because the speaker (6Ω) is connected between FL-GND FL and ① point voltage is higher than ② point.

When the register value between FL-GND FL becomes under 1.83Ω, Q3601 began to operate, Q3639 turns ON and Q3640 (E, C, B) turns ON, then XPROTECT becomes Mid level.

→ U-com detects the XPROTECT level and sets Power OFF.

(1) SP Relay

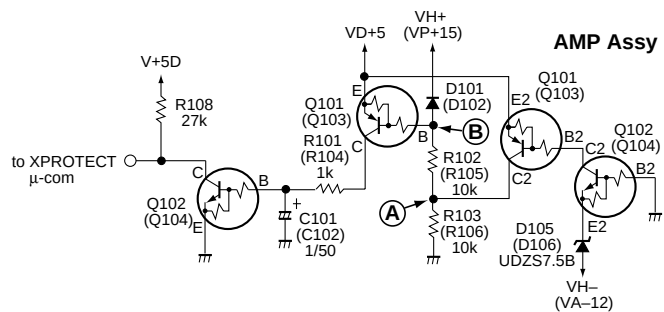
Q3632 (E2, C2, B2), Q3633, Q3636(E,C,B) becomes ON and the line which operate SP relay becomes low level, then SP relay turns OFF.

(2) HP MUTE

Q3635 turns ON and MUTE circuit of HP ASSY turns ON.

3 Short Circuit Detection Circuit of AMP Power Line (+15V(VP+15), Vb+5, -12V(VA-12))

The Circuit for making POWER OFF when VP+15, VD+5 and VA-12 is short-circuited (to GND).



- At normal state as Q101 (E2, B2, C2)(Q103), Q102 (E2, B2, C2) (Q104) is ON state, ① point is about 5V. And because ② point voltage is also almost same and Q101 (E, C, B) (Q103) do not turn ON, and Q102(E, C, B) do not turn ON.

(1) When VH+(VP+15) is short-circuited (to GND)

② point voltage becomes almost GND level and turned to be operating point for Q101(E, C, B)(Q103), then Q101(E, C, B)(Q103) turns ON and also Q102(E, C, B)(Q104) turns ON and XPROTECT becomes LOW level.

→ U-com detects the XPROTECT level and sets Power OFF.

(2) When VH-(VA-12) is short-circuited

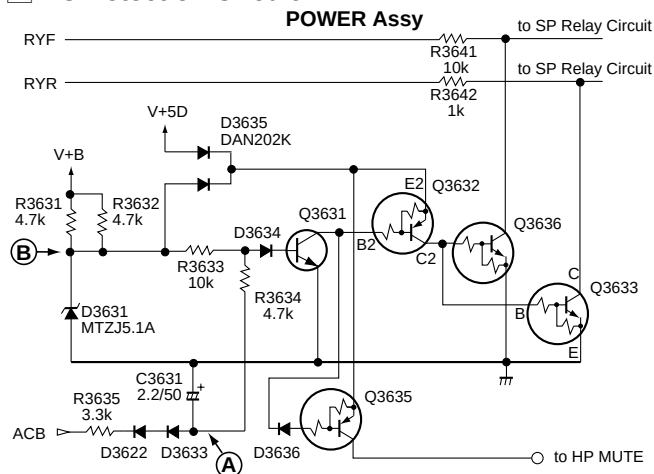
AS VE of Q102 (E2, C2, B2)(Q104) becomes same voltage with VB, Q102(E2, C2, B2) (Q104) turns OFF.

And Q101 (E2, B2, C2)(Q103) becomes OFF, and as the voltage of ① and ② points is not 5V, Q101 (E, C, B)(Q103) turns ON and it becomes same with VH+ procedure.

(3) When VD+5 is short-circuited

The line voltage of XPROTECT becomes Low level, then U-com detects and set the POWER OFF.

2 AC Detection Circuit



- ① point is DC voltage by half-wave rectifying of POWER AC.
- ② point is about 5V.

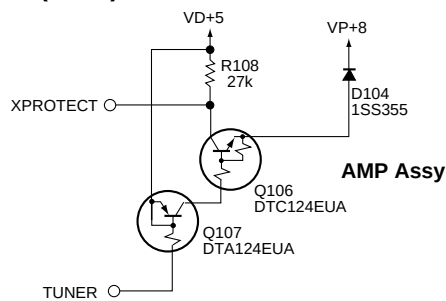
- The voltage between ①-② is divided by R3633 and R3634 and it becomes Q3631 base bias voltage.

As the voltage of this point at normal state is (-) side, Q3631 does not turn ON.

When the AC plug is pulled out and AC Power turns OFF, Q3631 base bias voltage becomes (+) side (Over 0.6V) and Q3631 turns ON.

And it operates following procedure.

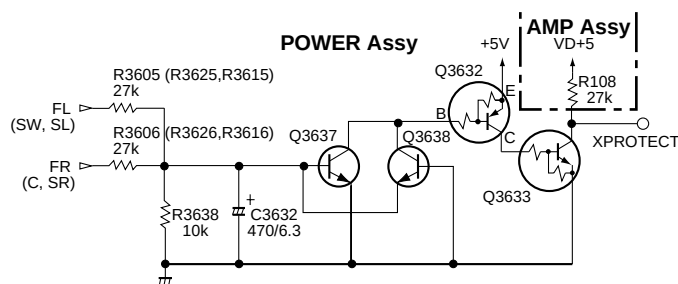
4 Short Circuit Detection Circuit of DVD Power Line (VP+8)



VP+8 is Power Line when the set is DVD Function (TUNER is High level).
At this time when VP+8 is short-circuited, as TUNER is Low level, Q106 turns ON and XPROTECT becomes Low level.
→U-com detects the XPROTECT level and sets Power OFF.

Except DVD Function even if VP+8 is GND level, as TUNER is also High level, Q107 is OFF and XPROTECT does not become LOW level.

5 DC Detection Circuit of SP Terminal



● At normal state both Q3637 and Q3638 are OFF.

(1) When (+) side DC Voltage occurs at SP terminal
When (+) side DC voltage occurs at L ch or R ch and VB of Q3637 becomes higher than operating point, Q3632(E, C, B) turns ON and XPROTECT becomes Low level.
→ U-com detects the XPROTECT level and sets Power OFF.

(2) When (-) side DC Voltage occurs at SP terminal
It is reverse operation as (+) side. Q3638 turns ON and XPROTECT operates.

[How to return from the protection circuit operating]

XV-DV303 operates the protection circuit under the following conditions and makes the set Power OFF.

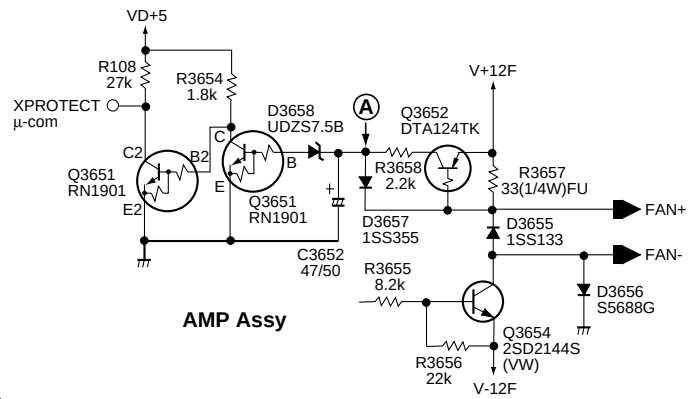
1. When major voltage becomes down to low level because of short-circuit or without connection.
2. When detecting abnormal thermal rise by the thermistor.
3. When being disconnected Fan connector or blocked of the Fan rotation
4. When making the Speaker connector short-circuited.

At this time the timer LED of the front panel blinks and informs the abnormal state.

When operating the protection circuit, if it works by above condition 4, it is possible to return immediately by the Power ON button. If it operates by other conditions as above condition 1 to 3, it is possible to return by turning the Power ON 1 minute after starting protection circuit operation.

When it is necessary to turn the Power ON without waiting 1 minute, pull out the AC plug and discharge the both terminal of the backup capacitor (C5575) of U-com board. By doing so, as the U-com is reset to the initial state, it is possible to set the Power ON again immediately.

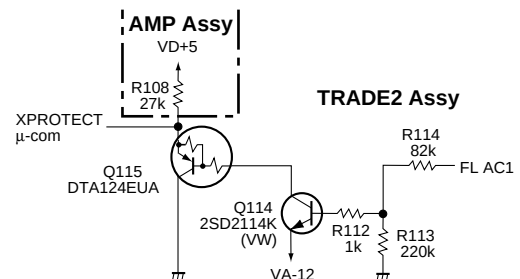
6 FAN Detection Circuit



When the FAN is not connected between FAN+ and FAN-, or FAN is locked state as the foreign matter is blocked, Q3652 Base turns open, and then Q3652 and Q3651(E, C, B) turns OFF. Then Q3651 (E2, B2, C2) turns ON and XPROTECT becomes LOW level.
→U-com detects the XPROTECT level and sets Power OFF.

When FAN+ and FAN- is short-circuited, ① point voltage becomes higher than GND level because of part D3656 and D3657. Then it is lower than part D3658, Q3651(E, C, B) turns OFF and Q3651(E2, B2, C2) turns ON, and XPROTECT becomes LOW level.

7 Short Circuit Detection Circuit of VFDP



When VFDP is short-circuited to GND or DC voltage of FLAC1 becomes GND level because of DC bias failure of FLAC1 (normal state voltage is -27V), Q107 turns ON and also Q115 turns ON, then XPROTECT becomes LOW level.

→U-com detects the XPROTECT level and sets Power OFF.

7.1.6 DISASSEMBLY

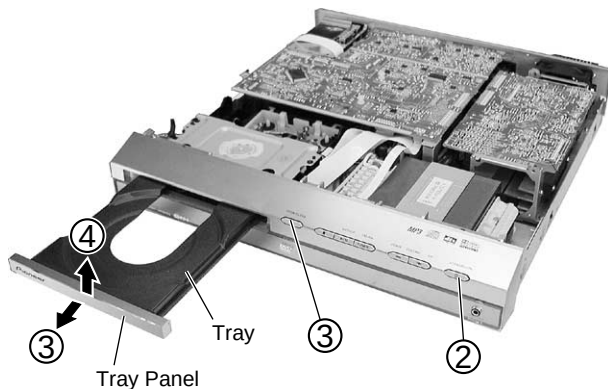
■ DIAGNOSIS OF PCBs

Note

When diagnosing the unit, be sure to use four connection cables for service.
(Part No. : GGD1266 × 2, GGD1222 × 1, GGD1310 × 1)

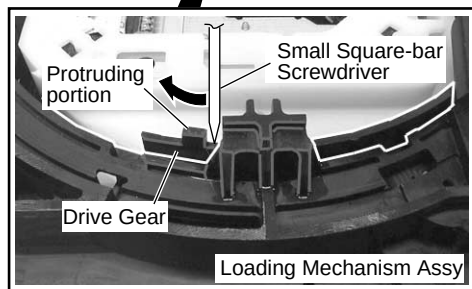
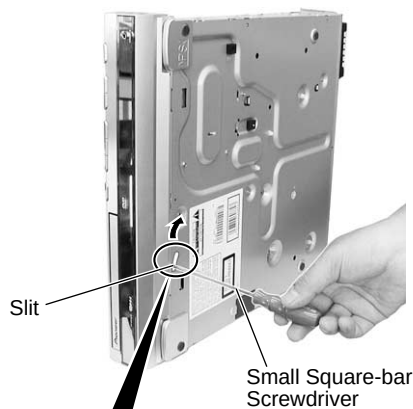
1 Bonnet and Tray Panel

- ① Remove the Bonnet (Screws × 6)
- ② Turn on the Power
- ③ Open the Tray (▲)
- ④ Remove the Tray Panel



🔧 How to Open the Tray by Manual Operating

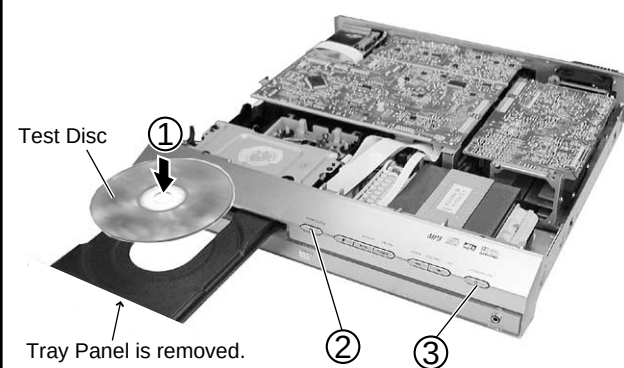
In the reverse state, pass a small screwdriver through a slit and slide a protruding portion of the Drive Gear of the Loading Mechanism Assy to the direction of arrow.
If the Tray moved toward the front about 2 or 3 cm, pull out the Tray by hands.



• Bottom View

2 Test Disc Set

- ① Set the Test Disc
- ② Close the Tray (▲) → Clamp the Test Disc
- ③ Turn off the Power
- ④ Pull out the Power Cord from the outlet



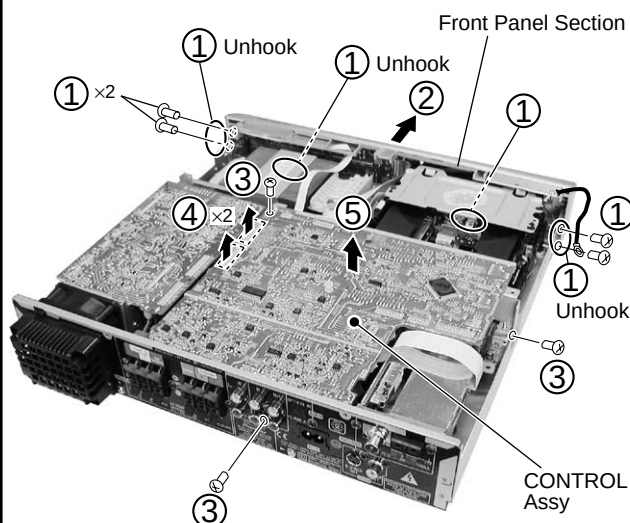
3 Front Panel Section and CONTROL Assy

• Front Panel Section

- ① Remove the Screws × 4 and Unhook × 4
- ② Remove the Front Panel Section

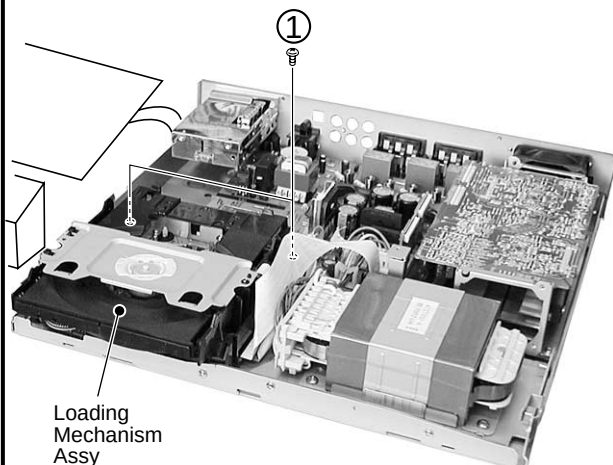
• CONTROL Assy

- ③ Remove the Screws × 3
- ④ Remove the Connectors × 2
- ⑤ Remove the CONTROL Assy



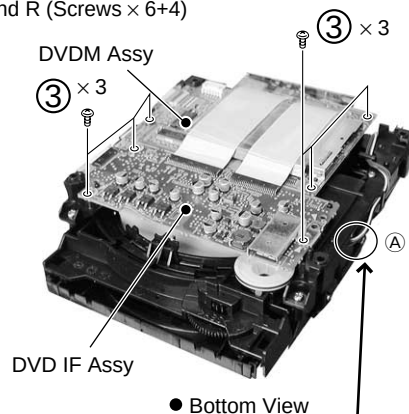
4 Diagnosis of DVDM Assy

- ① Remove the Loading Mechanism Assy (Screws × 2)



- ② Reverse the Loading Mechanism Assy

- ③ Remove the DVDM Assy, the DVD IF Assy and Adapter02 L and R (Screws × 6+4)



Note : First, disconnect the connector part A and unhook all styling. Then after setting the set as the picture below, connect the A part again.

- ④ Connect two Connection Cables for Service (GGD1266) between CONTROL Assy and TRADE 2 Assy.

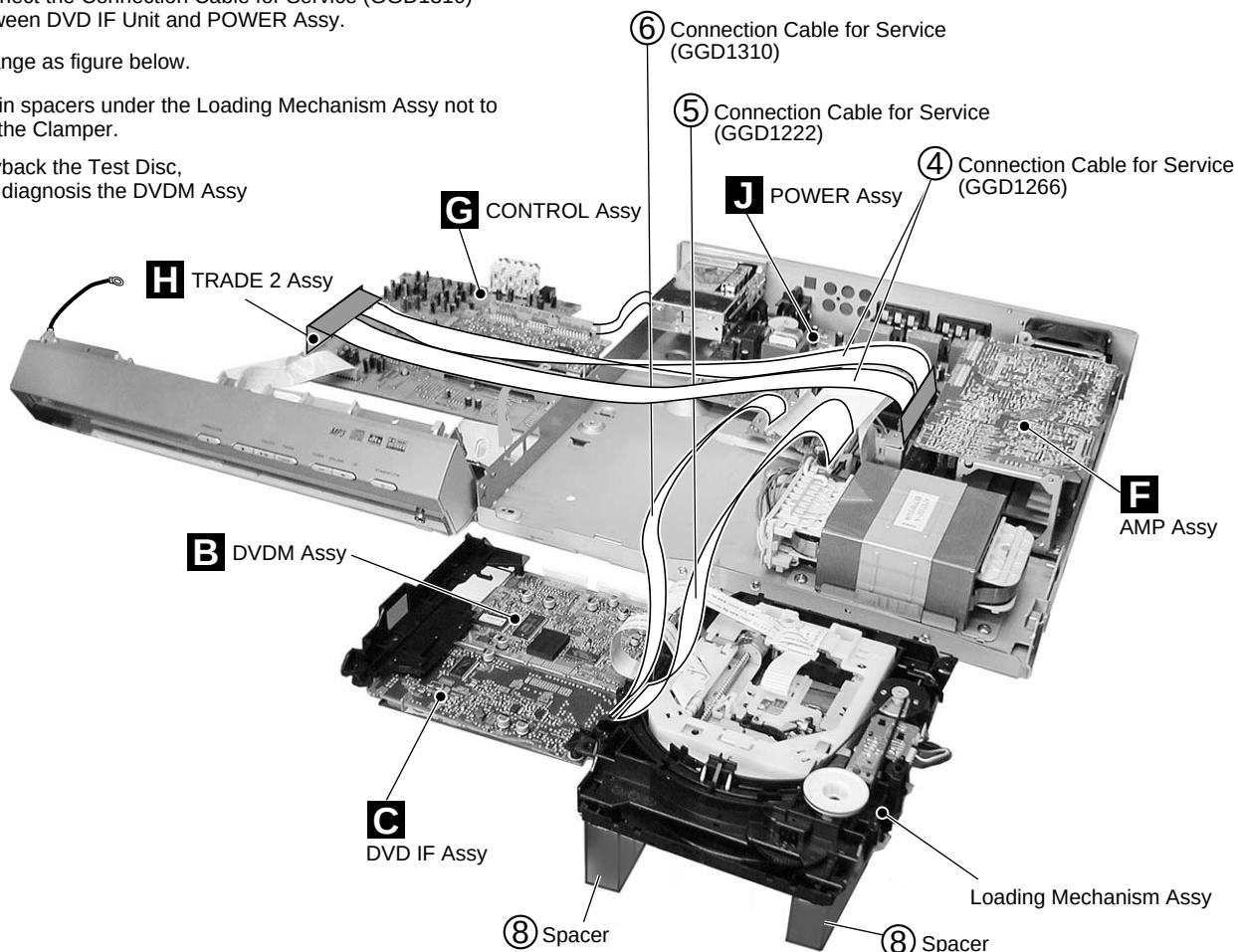
- ⑤ Connect the Connection Cable for Service (GGD1222) between DVD IF Unit and POWER Assy.

- ⑥ Connect the Connection Cable for Service (GGD1310) between DVD IF Unit and POWER Assy.

- ⑦ Arrange as figure below.

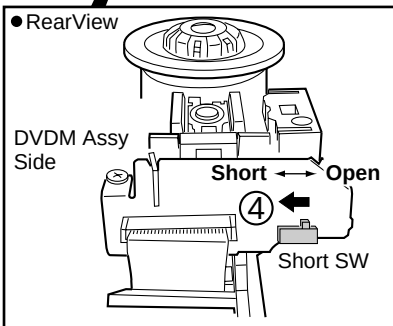
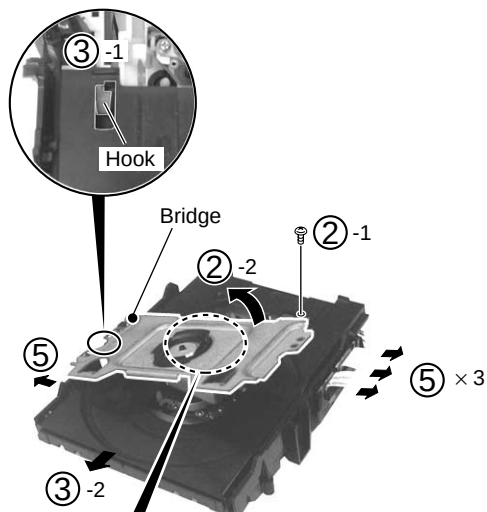
- ⑧ Put in spacers under the Loading Mechanism Assy not to rub the Clamper.

- ⑨ Playback the Test Disc, and diagnosis the DVDM Assy

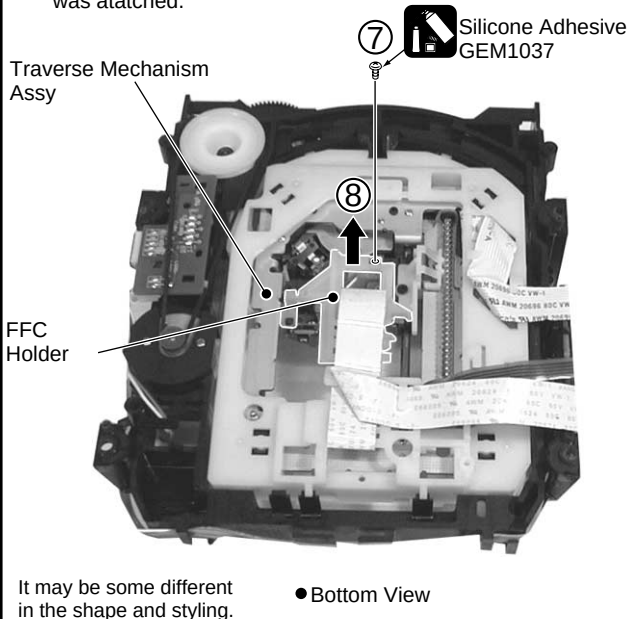


Disassembly of the Traverse Mechanism Assy-S and the Pickup Assy-S

- ① Remove the Tray Panel, Bonnet, Front Panel, CONTROL Assy and Loading Mechanism Assy.
- ② Remove the Bridge (Screw $\times 1$).
- ③ Pull out the Tray and remove it while unhooking a Hook.
- ④ Turn the Short SW to Short side.
- ⑤ Remove four connectors.



- ⑥ Remove the DVDM Assy (Screws $\times 3$), DVD IF ASSY (Screws $\times 3$) and Adapter02 L and R (Screws 2×2).
- ⑦ Remove a screw.
Cautions:
Screw is locked with Silicone Bond.
Please lock it with Silicone Bond when installs it.
- ⑧ Remove the FFC Holder with the state which Flexible Cable was attached.



It may be some different in the shape and styling.

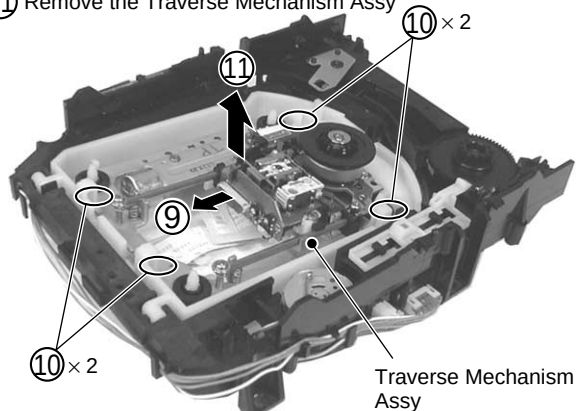
● Bottom View

Pickup Assy

Traverse Mechanism Assy

When Removing The Traverse Mechanism Assy-S

- ⑨ Remove the Pickup Flexible Cable
- ⑩ Unhook ($\times 4$)
- ⑪ Remove the Traverse Mechanism Assy

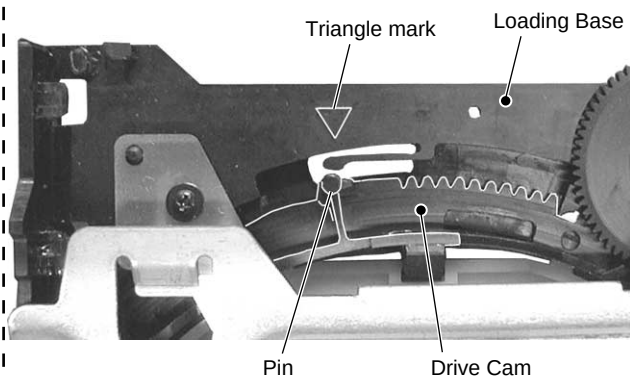


It may be some different in the shape.

Exchange

Caution in the tray insertion

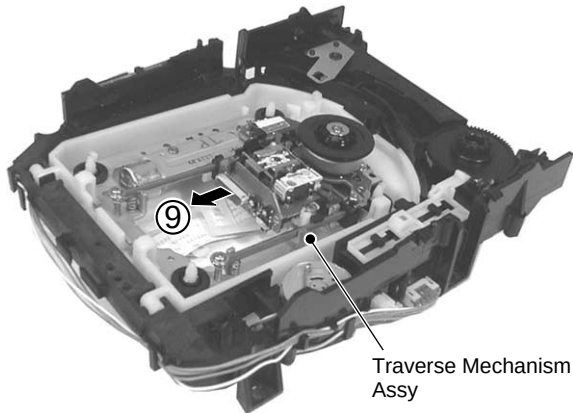
In the Tray insertion, insert it after matching a triangle mark of the Loading Base and a position of pin of the Drive Cam.





● When Removing The Pickup Assy-S

- ⑨ Remove the Pickup Flexible Cable.

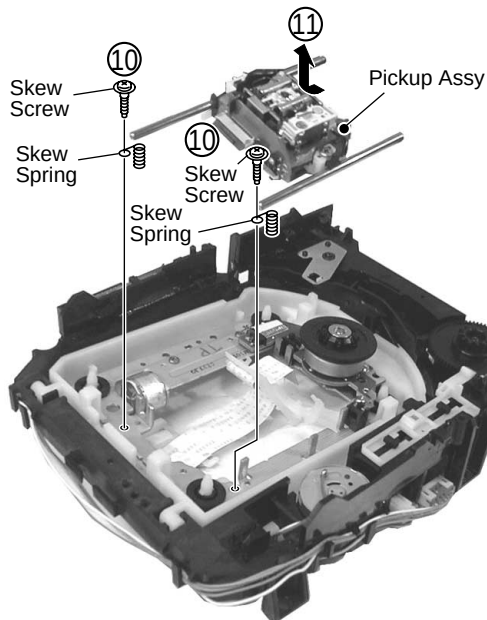


It may be some different in the shape.



- ⑩ Remove two Skew Screws and two Skew Springs.

- ⑪ Remove the Pickup Assy.



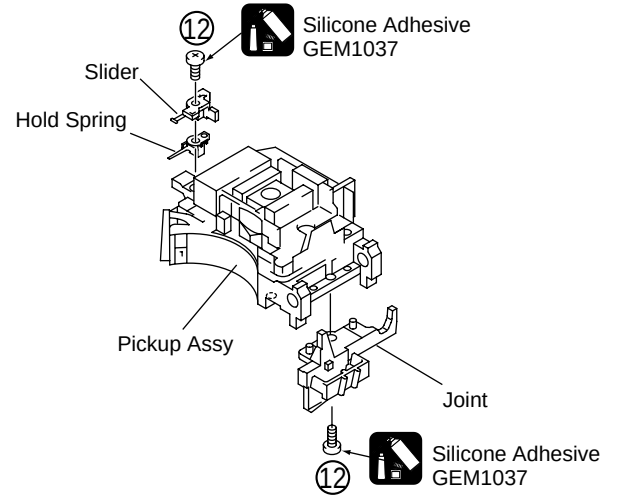
It may be some different in the shape.



- ⑫ Remove two screws.

Cautions:

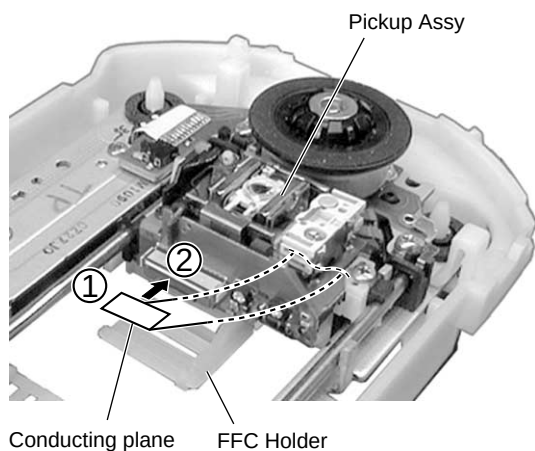
Screw is locked with Silicone Bond.
Please lock it with Silicone Bond when installs it.



Exchange

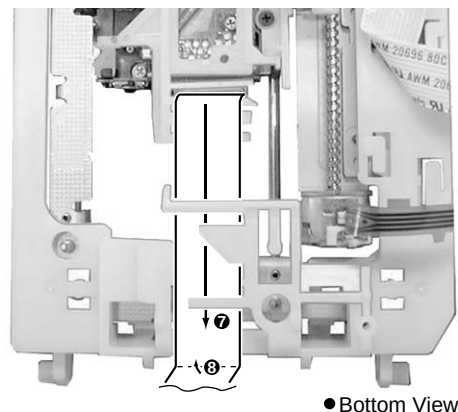
How to style the Pickup Flexible Cable

- ① Fold a edge of lining part of the Pickup Flexible Cable.
- ② Insert the Pickup Flexible Cable in connector, and lock it surely.



Caution:

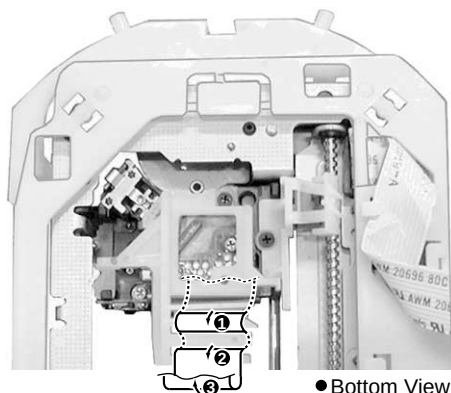
Move the Pickup to the innermost of the disc.



●Bottom View



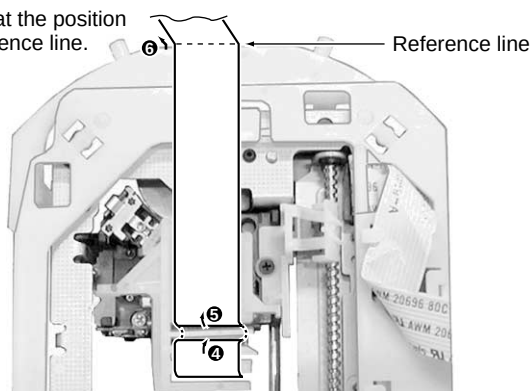
- ③ Perform the styling as shown in figure below.



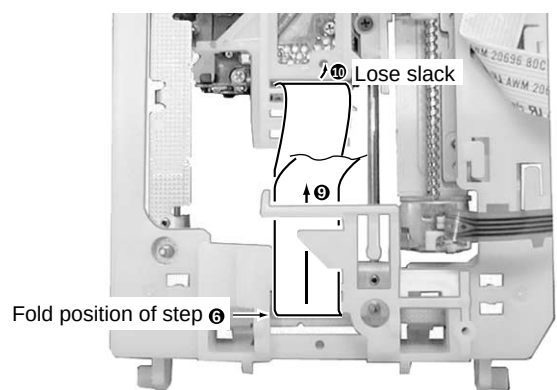
●Bottom View



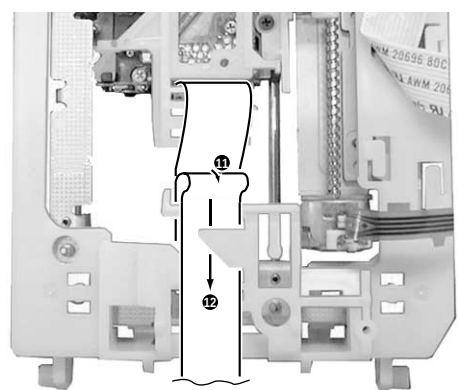
Fold it at the position of reference line.



●Bottom View



●Bottom View



●Bottom View

7.2 IC

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

● List of IC

PDC098A, CS493292, BA6664FM, L6315ATXXTY, M56788AFP, STI5519AVB-B0C, PCM1742KE, MM1567AJ

■ PDC098A (CONTROL ASSY : IC5501)

- System U-com

● Pin Function

No.	Pin Name	I/O	Pin Kind	Pin Function	Active
1	DVD ON/OFF	O	PORT	DVD POWER Control	H
2	HPDET	I	PORT	Checking HEADPHONE Connector Push-In/Pull Out	H
3	NC	O	PORT		
4	ACPULSE	I	INTO PORT	AC Pulse Input	
5	CDERR	I	INT1 PORT	ERR and OVER Input from DIR	
6	RDSCLK	I	INT2 PORT	Clock Input from RDS Decoder	
7	REMOCON	I	INT3 PORT	Remote Control signal Input	
8	XRESET	I	RESET	Reset Input	
9	—	—	for OSC		
10	—	—	for OSC		
11	VSS1	—	GND		
12	—	—	for OSC		
13	—	—	for OSC		
14	VDD1	—	VDD		
15	SIMUKE	I	ANALOG INPUT	Setting for Model types	
16	NC	O	ANALOG INPUT		
17	3.3DETECT	I	ANALOG INPUT	DVD 3.3V Detection Input	
18	KEY1	I	ANALOG INPUT	Key Input	
19	ST/TUNE	I	ANALOG INPUT	STEREO/TUNED Detection Input	
20	XPROTECT	I	ANALOG INPUT	Trouble Detection Input	
21	NC	O	ANALOG INPUT		
22	NC	O	ANALOG INPUT		
23	SYS_DOUT	O	HARD SERIAL	System Bus Data Output (AMP side output)	
24	SYS_DIN	I	HARD SERIAL	System Bus Data Output (AMP side output)	
25	SYS_CLK	I	HARD SERIAL	System Bus Clock Input	
26	DSPDIN	O	HARD SERIAL	CODEC+DIR IC Data Input, Cristal's DSP(AMP side output)[DSPcoreCDDO+CSDI]	
27	DSPOUT	I	HARD SERIAL	CODEC+DIR IC Data Input, Cristal s DSP(AMP side input)[DSPcoreCDDO+CSDO]	
28	DSPCLK	O	HARD SERIAL	CODEC+DIR IC Clock, Cristal's DSP[DSPcoreCDCK+CSCK]	
29	SYS_CS2	O	PORT	System Bus Chip Select 2	
30	SYS_CS1	O	PORT	System Bus Chip Select 1	
31	XHPMUTE	O	PORT	Headphone MUTE ON/OFF	L
32	XRECMUTE	O	PORT	MUTE ON/OFF for REC OUT	L
33	XMUTECH	O	PORT	MUTE ON for C-ch	L
34	RYRC	O	PORT	REAR Relay ON/OFF	H
35	RYFSC	O	PORT	FRONT/CENTER/SW Relay ON/OFF	H
36	XTMRLED	O	PORT	Timer LED Control	L
37	NC	O	PORT		
38	LEVELSHIFT	O	PORT	Level Shift Control (VOL 0– 5 :H)	H
39	VSS4	—	GND		
40	VDD4	—	VDD		
41	ATTCONT1	O	PORT	ATT Control 1 (TV, LINE1)	
42	ATTCONT2	O	PORT	ATT Control 2 (TV, LINE1)	
43	TESTMODE	I	PORT	Test Mode Detection Jumper	H
44	UTEST	I	PORT	Unit Test Mode Detection Jumper	H
45	DTSDMIX	O	PORT	Control of Gain-up for DTS Down-mix	H
46	SWFMIX	O	PORT	Control for Subwoofer mix	H
47	NC	I	PORT	Fixed to GND	
48	OEM	I	PORT	OEM Model Distinction Input (H:OEM) (Stand-by for model appearance)	
49	FLDDAT	O	PORT or SIO	FL Driver Control Data	
50	FLDCE	O	PORT	FL Driver Chip Enable	

A

B

C

D

E

F

No.	Pin Name	I/O	Pin Kind	Pin Function	Active
51	FLDCLK	O	PORT or SIO	FL Driver Control Clock	
52	FLRST	O	PORT	FL Driver Reset	
53	—		PWM PORT		
54	—		PWM PORT		
55	VDD2	—	VDD		
56	VSS2	—	GND		
57	TXCE	O	PORT	TX Module Control Chip Enable	
58	NC	O	PORT		
59	NC	O	PORT		
60	NC	O	PORT		
61	TXCLK	O	PORT	TX Module Control Clock	
62	TXODAT	O	PORT	TX Module Control Data	
63	TXMUTE	O	PORT	TUNER MUTE and IF Request Control	
64	RDSPOW	O	PORT	RDS ON/OFF (L : POWER ON)	L
65	RDSDATA	I	PORT	Data Input from RDS Decoder	
66	TXIDAT	I	PORT	Data Input from TX Module	
67	XDSPMUTE	O	PORT	Control MUTE of DSP(Board)	H
68	A/D MODE	O	PORT	DSP MUTE when ANALOG	
69	NC	O	PORT		
70	NC	O	INT5		
71	NC	O	PORT		
72	DVDMUTE	I	PORT	MUTE Request from DVD U-com (Use at REC MUTE)	
73	CA15	O	PORT	BOOT ADDRESS for SRAM/P2ROM (Cristal'sDSP)	
74	CA16	O	PORT	BOOT ADDRESS for SRAM/P2ROM (Cristal'sDSP)	
75	CA17	O	PORT	BOOT ADDRESS for SRAM/P2ROM (Cristal'sDSP)	
76	CA18	O	PORT	BOOT ADDRESS for SRAM/P2ROM (Cristal'sDSP)	
77	CA19	O	PORT	BOOT ADDRESS for SRAM/P2ROM (Cristal'sDSP)	
78	ASSELB	O	PORT	Audio Source Select B (BU4052)	
79	ASSELA	O	PORT	Audio Source Select A (BU4052)	
80	NC	O	PORT		
81	NC	O	PORT		
82	CSCS	O	PORT	Chip Select for Cristal's DSP	
83	CSREQ	I	PORT	Request Input from Cristal's DSP	
84	FS96	I	PORT	96k Input from CODEC	
85	ABOOT	O	PORT	Chip Select for SRAM/P2ROM	
86	CSRST	O	PORT	RESET for Cristal's DSP	
87	CDCS	O	PORT	Chip Select for CODEC	
88	VSS3	—	GND		
89	VDD3	—	VDD		
90	SCPDN	O	PORT	POWER Down (RESET) for CODEC	
91	SYSPOW	O	PORT	System Power Control	H
92	NC	O	PORT		
93	XDVDRST	O	PORT	DVD RESET	
94	XSYSMUTE	O	PORT	System MUTE Control	L
95	VOLCE	O	PORT	MAIN VOLUME Chip Enable	
96	VOLCLK	O	PORT	VOLUME Clock	
97	VOLDATA	O	PORT	VOLUME Data	
98	FLASHE/D	—	PORT	for FLASH Writing	
99	FLASH DO	—	PORT	for FLASH Writing	
100	FLASH CLK	—	PORT	for FLASH Writing	

■ CS493292 (DSP ASSY : IC8101)

- DSP for Decode

● Pin Function

No.	Pin Name	I/O	Function
1	VD1	–	POWER for Digital Line (+2.5V)
2	DGND1	–	GND for Digital Line
3	AUDATA3	O	Audio Data Output (SBL/SBR)
4	EMWR	O	External Memory WR
5	EMOE	I	External Memory OE
6	SCDIN	I	U-com Communication Data Input
7	SCCLK	I	U-com Communication Clock Input
8	EMAD7	I/O	External SRAM/P2ROM Communication Data
9	EMAD6	I/O	External SRAM/P2ROM Communication Data
10	EMAD5	I/O	External SRAM/P2ROM Communication Data
11	EMAD4	I/O	External SRAM/P2ROM Communication Data
12	VD2	–	POWER for Digital Line (+2.5V)
13	DGND2	–	GND for Digital Line
14	EMAD3	I/O	External SRAM/P2ROM Communication Data
15	EMAD2	I/O	External SRAM/P2ROM Communication Data
16	EMAD1	I/O	External SRAM/P2ROM Communication Data
17	EMAD0	I/O	External SRAM/P2ROM Communication Data
18	CS	I	U-com Communication Chip Select
19	SCDOUT	O	U-com Communication Data Output
20	INTREQ	O	U-com Communication Request
21	EXTMEM	O	External Memory Output Enable
22	SDATAN1	I	Audio Data Input
23	VD3	–	POWER for Digital Line (+2.5V)
24	DGND3	–	GND for Digital Line
25	SCLKN1	I	Bit Clock Input
26	LRCLKN1	I	LR Clock Input
27	SDATAN2	I	Audio Data Input
28	SCLKN2	I	Bit Clock Input
29	LRCLKN2	I	LR Clock Input
30	CLKIN	I	Master Clock Input (27MHz)
31	CLKSEL	I	Master Clock Control (Not used : Pull down)
32	FILT2	I	PLL Circuit Connection terminal
33	FILT1	I	PLL Circuit Connection terminal
34	VA	–	POWER for Analog Line (+2.5V)
35	AGND	–	GND for Analog Line
36	RESET	I	Reset terminal
37	DD	–	Not used (Pull up)
38	DC	–	Not used (Pull up)
39	AUDATA2	O	Audio Data Output (LFE/C)
40	AUDATA1	O	Audio Data Output (SL/SR)
41	AUDATA0	O	Audio Data Output (FL/FR)
42	LRCLK	I	LR Clock Input
43	SCLK	I	Bit Clock Input
44	MCLK	I	Audio Master Clock (Not used : Pull down)

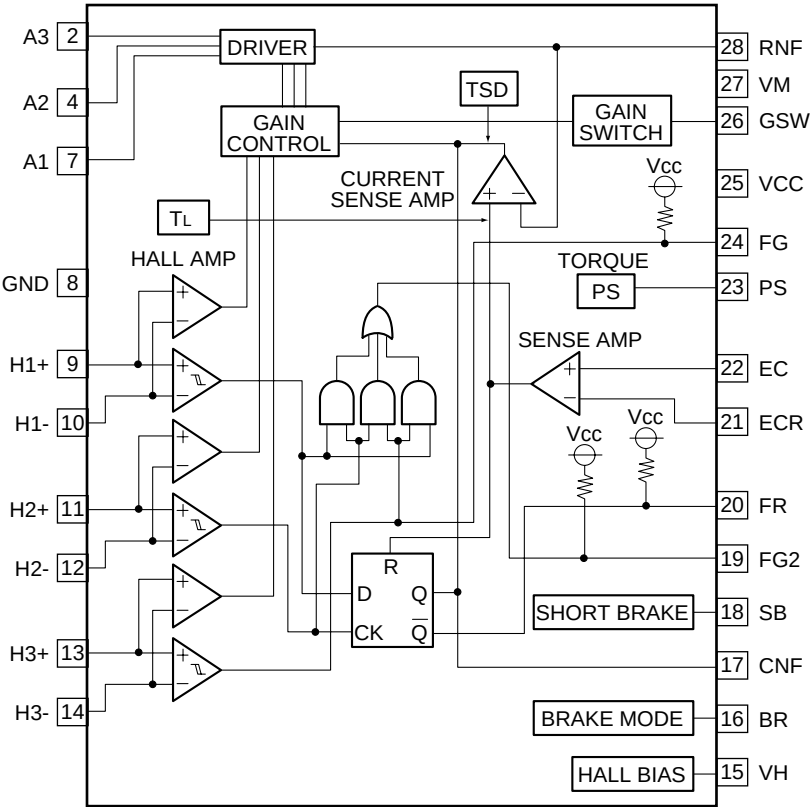
A

BA6664FM (DVDM ASSY : IC251)

• Spindle Driver

B

● Block Diagram



C

D

● Pin Function

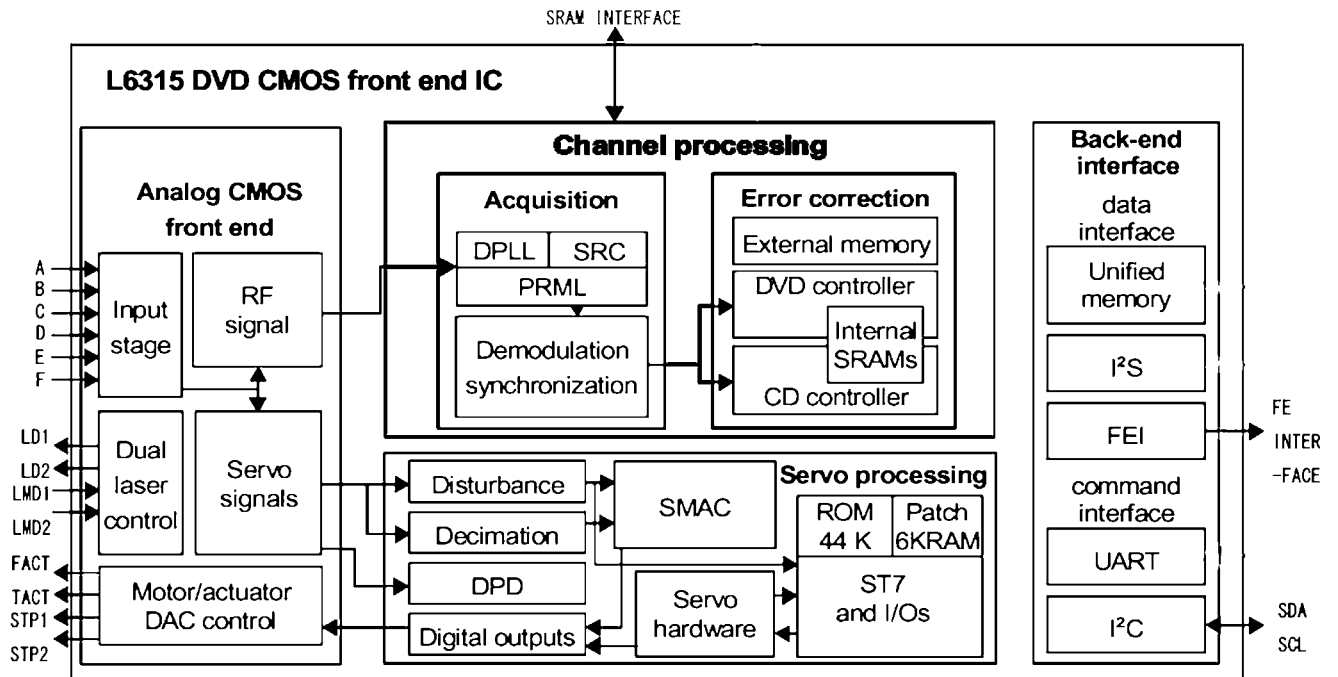
No.	Pin Name	Pin Function	No.	Pin Name	Pin Function
1	N.C.	N.C.	16	BR	Brake mode switching pin
2	A3	Output pin	17	CNF	Capacitor connection pin for phase compensation
3	N.C.	N.C.	18	SB	Short brake pin
4	A2	Output pin	19	FG2	FG 3-phase mix signal output pin
5	N.C.	N.C.	20	FR	Rotation detecting pin
6	N.C.	N.C.	21	ECR	Control reference pin of output voltage
7	A1	Output pin	22	EC	Output voltage control pin
8	GND	GND pin	23	PS	Power save pin
9	H1+	Hall signal input pins	24	FG	FG signal output pin
10	H1-		25	VCC	Power supply pin
11	H2+		26	GSW	Gain switching pin
12	H2-		27	VM	Motor power pin
13	H3+		28	RNF	Resistor connection pin for output current detection
14	H3-		FIN	FIN	GND
15	VH	Hall bias pin			

F

■ L6315ATXXTY (DVDM ASSY : IC301)

• Front End IC

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function
1	IREF	Analog input	Bandgap filtering input
2	GNDAI	Analog ground	Analog power supply ground
3	RFSACD	Analog output	RF output for SA-CD support
4	RFIN	Analog input	RF path data input (after AC coupling)
5	RFOUT	Analog output	RF path data output (before AC coupling)
6	VCCA18	Analog supply	Input stage power supply
7	TST_ADC	Analog output	RF path analog test pin
8	TST_SLICE	Analog output	PM analog test pin
9	TST_PM	Analog output	PM analog test pin
10	A	Analog input	Input stages laser diode A
11	GNDMN	Analog ground	Input stages ground main
12	B	Analog input	Input stages laser diode B
13	VCC33MN	Analog supply	Input stages 3.3 V misc.
14	REFD	Analog output	Reference voltage for pickup
15	VCC18IS	Analog supply	Input stages 1.8 V main
16	D	Analog input	Input stages laser diode D
17	VCCA18IS	Analog supply	Input stages 1.8 V misc.
18	C	Analog input	Input stages laser diode C
19	VCC33IS	Analog supply	Input stages 3.3 V misc.
20	GND AIS	Analog ground	Input stages ground misc.
21	VCC33SD	Analog supply	Input stages 3.3 V side
22	VCC18SD	Analog supply	Input stages 1.8 V side
23	GNDSD	Analog ground	Input stages ground side
24	F	Analog input	Input stages laser diode F
25	E	Analog input	Input stages laser diode E
26	VSHIELIS	Analog ground	IS shield
27	VDDADC	Analog supply	ADC digital power supply
28	VSSADC	Analog ground	ADC digital ground supply
29	VCCADC	Analog supply	ADC analog power supply
30	GNDADC	Analog ground	ADC analog ground supply
31	VSHIELDADC	Analog ground	ADC shield
32	NC	–	–
33	BOOT_MODE	Digital input	Boot mode
34	VSS	Digital ground	VSS I/O
35	VDD3	Digital supply	VDD I/O (3.3 V)
36	PC[0] (NC)	Digital I/O	–
37	PC[1] (PS)	Digital I/O	Driver IC power save
38	PC[2] (FG)	Digital I/O	FG pulse input
39	PC[3] (SB)	Digital I/O	Spindle short brake
40	PC[4] (SLDPOS)	Digital I/O	Slider position input

No.	Pin Name	I/O	Pin Function
41	PC[5] (VROFST)	Digital I/O	VREF offset adjustment (stand-by)
42	PC[6] (SPDL_PDM)	Digital I/O	Spindle drive output
43	PC[7] (OEICG)	Digital I/O	OEIC gain sw
44	VSS	Digital ground	VSS core
45	VDD3S	Digital supply	VDD core
46	VSS_SPL	Digital ground	VSS I/O
47	RAM_DQM	Digital output	SDRAM DQM
48	RAM_WEN	Digital output	RAM write enable
49	RAM_CASN / Sdrdr14	Digital output	SRAM address
50	RAM_RASN / Sdrdr15		
51	RAM_A[13]		
52	RAM_A[12]		
53	RAM_A[11]		
54	RAM_A[10]		
55	RAM_A[0]		
56	RAM_A[1]		
57	RAM_A[2]		
58	RAM_A[3]		
59	RAM_A[4]		
60	RAM_A[5]		
61	RAM_A[6]		
62	RAM_A[7]		
63	RAM_A[8]		
64	RAM_A[9]		
65	RAM_CLK / Sdrdr16		
66	VDD_SPL	Digital supply	VDD I/O
67	VDD3	Digital supply	VDD I/O
68	VSS	Digital ground	VSS I/O
69	RAM_DQ[0]	Digital I/O	SRAM data
70	RAM_DQ[1]		
71	RAM_DQ[2]		
72	RAM_DQ[3]		
73	RAM_DQ[4]		
74	RAM_DQ[5]		
75	RAM_DQ[6]		
76	RAM_DQ[7]		
77	VDD3S	Digital supply	VDD core
78	VSS	Digital ground	VSS core
79	OUT_REQ	Reserved	Must be set to ground
80	OUT_ERR	Digital output	Output interface

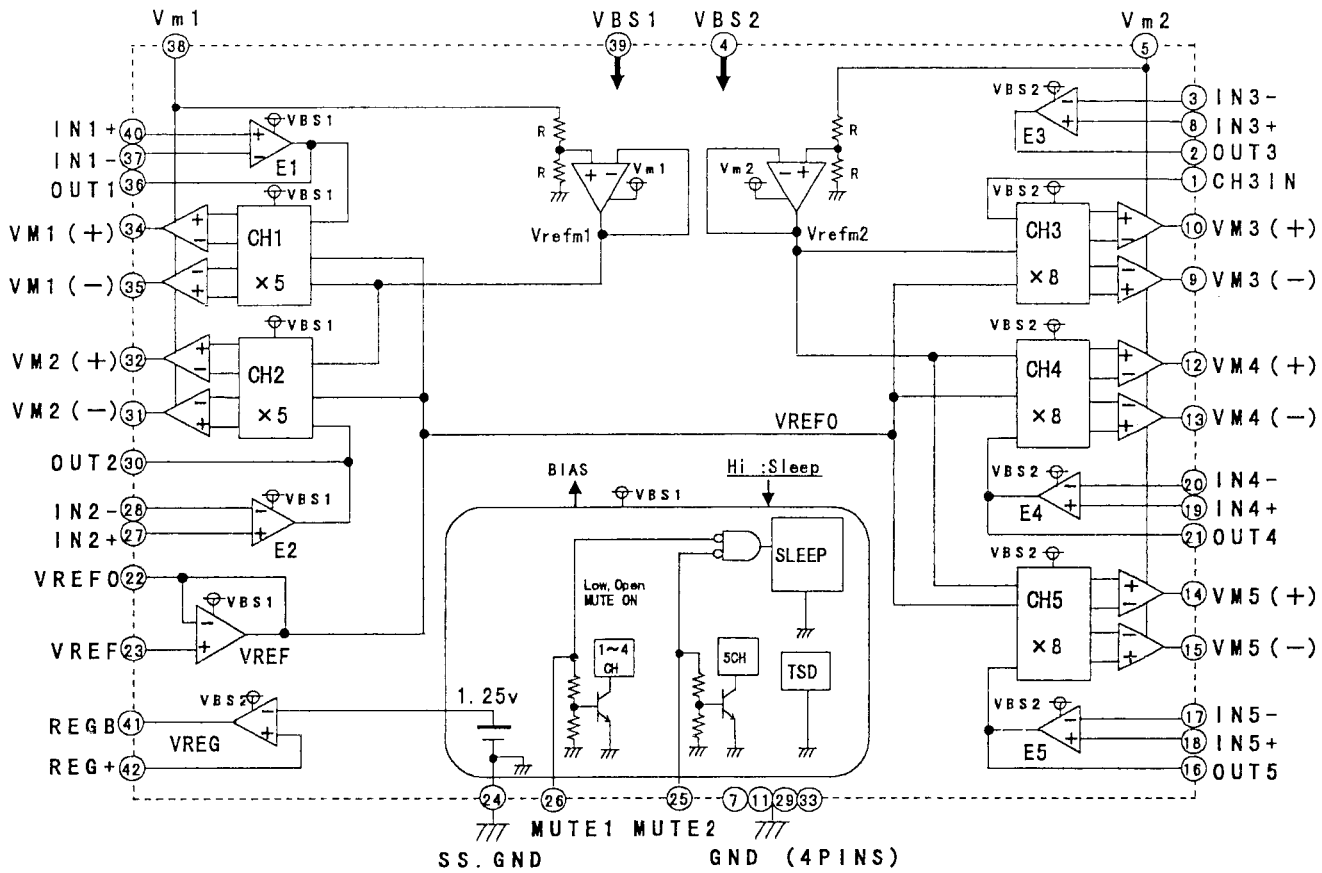
No.	Pin Name	I/O	Pin Function
81	OUT_SYNC	Digital output	Output interface
82	OUT_DVALID	Digital output	Output interface
83	OUT_CLK	Digital output	Output interface
84	OUT_DATA[0] (FE_DATA)	Digital output	Output interface
85	OUT_DATA[1] (FE_EVALID)	Digital output	Output interface: BW com
86	OUT_DATA[2] (FE_ECCBST)	Digital output	Output interface: BW com
87	OUT_DATA[3]	Digital output	Reserved
88	OUT_DATA[4]		
89	OUT_DATA[5]		
90	OUT_DATA[6]		
91	OUT_DATA[7]		
92	VDD3	Digital supply	VDD I/O
93	VSS	Digital ground	VSS I/O
94	PE[0] (FE_INIT)	Digital I/O	FE initialize input
95	PE[1] (NC)	Digital I/O	–
96	PE[2] (DMA)	Digital I/O	DMA input
97	PE[3] (SCL)	Digital I/O	I2C clock input
98	PE[4] (SDA)	Digital I/O	I2C data input
99	PD[0] (NC)	Digital I/O	–
100	PD[1] (NC)	Digital I/O	–
101	PD[2] (NC)	Digital I/O	–
102	PD[3] (NC)	Digital I/O	–
103	PD[4] (NC)	Digital I/O	–
104	PD[5] (NC)	Digital I/O	–
105	PD[6] (NC)	Digital I/O	–
106	PD[7] (NC)	Digital I/O	–
107	VDD3	Digital supply	VDD I/O
108	VSS	Digital ground	VSS I/O
109	VPP_TEST	Digital input	Test input
110	VCCD_BYP	Digital supply	VDD core
111	VCCD_OUT	–	No voltage to be applied
112	VSS	Digital ground	VSS core
113	VDD3S	Digital supply	VDD core
114	VSS	Digital ground	VSS I/O
115	VDD3	Digital supply	VDD I/O
116	RESET_IN	Digital input	Global reset signal
117	VCC18DAC	Analog supply	DAC analog power supply
118	STEPPER1	Analog output	DAC spindle motor
119	STEPPER2	Analog output	DAC sled motor
120	REFEXT	Analog input	DAC external reference

No.	Pin Name	I/O	Pin Function
121	REFGND	Analog ground	DAC analog ground supply
122	REFDAC	Analog output	DAC reference voltage
123	FACT	Analog output	DAC focus actuator
124	TACT	Digital output	DAC tracking actuator
125	GNDDAC	Analog ground	DAC analog ground
126	NC	–	–
127	VCCA33	Analog supply	DAC analog power supply
128	NC	–	–
129	GNDPLL	Analog ground	PM analog ground
130	PLLOFF	Analog input	PM reference disable PLL
131	FREOUT	Analog output	PM reference frequency output
132	FREIN	Analog input	PM reference frequency input
133	VCCPLL	Analog supply	PM analog power supply
134	SREG1	Analog output	External bipolar base
135	VCCR33	Analog supply	Analog power supply for regulator
136	SREG2	Analog output	External bipolar base
137	LD1	Analog output	Laser control laser diode 1
138	LD2	Analog output	Laser control laser diode 2
139	VCCA33	Analog supply	Analog power supply for input stages +
140	LCREF	Analog output	Laser control DAC reference
141	LMD1	Analog input	Laser control monitor diode 1
142	LMD2	Analog input	Laser control monitor diode 2
143	GNDL	Analog ground	Ground for laser control detection
144	VBGFILT	Analog input	Bandgap filtering input

M56788AFP (DVDM ASSY : IC351)

• FTS Driver IC

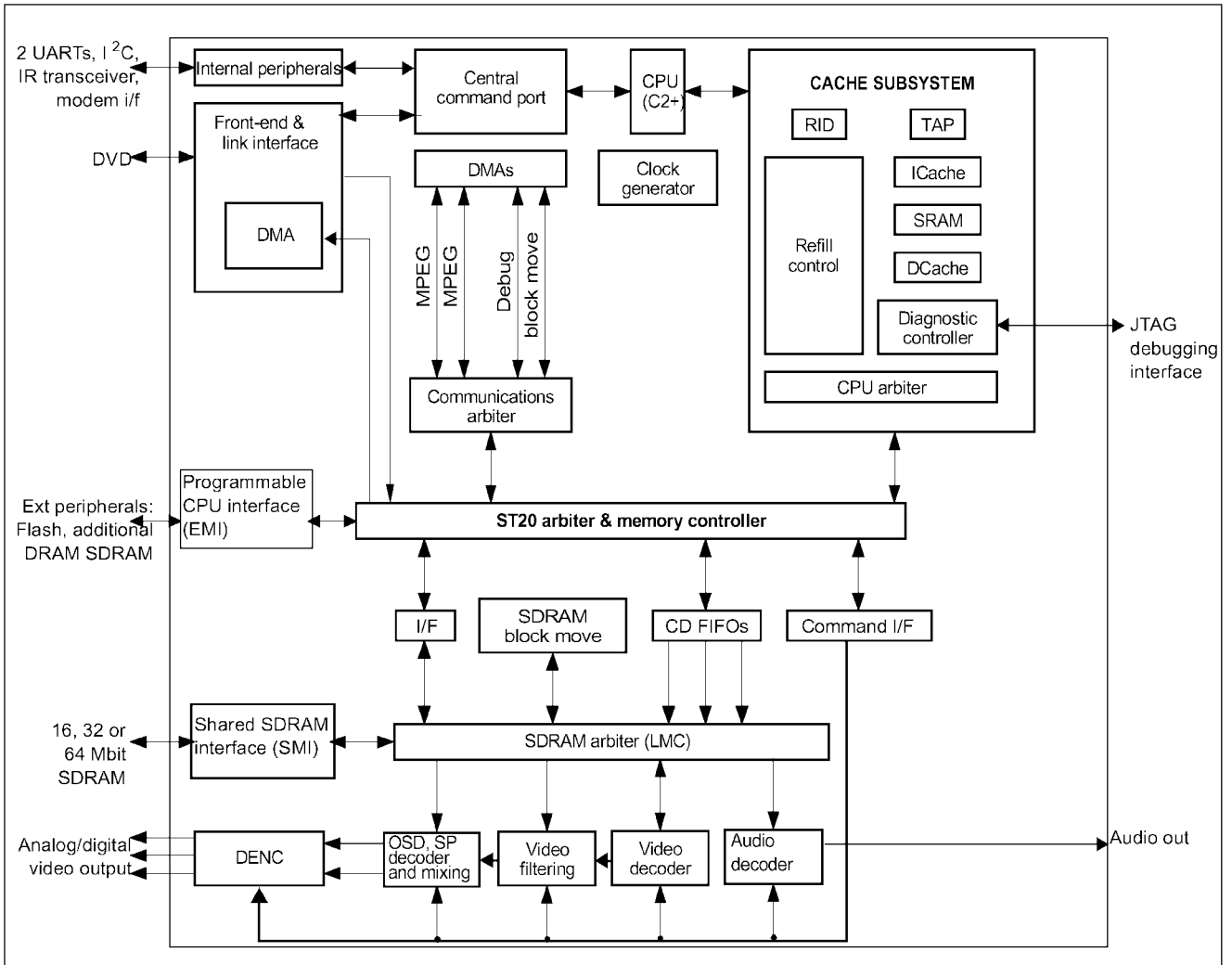
Block Diagram



STI5519AVB-B0C (DVDM ASSY : IC601)

• Back End IC

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Pin Function
1	FP_SO	OUT	Front Panel interface. (Soft) Serial transfer data output.
2	A_DATA3	OUT	Reserved
3	XAMUTE	OUT	Analog audio output line muteing output 'L'.
4	VDD_3V3	–	3.3 V Power supply
5	VSS	–	Ground
6	AQE_XCS	OUT	Reserved Audio Quality Enhancer IC's chip-select output.
7	SQUEEZ	OUT	S-Video output S1/S2 control signal at squeez output mode 'H'.
8	LETTER	OUT	S-Video output S1/S2 control signal & EURO(SCART) connector (FUNCTION SWITCHING) signal at letter-box output mode 'H'.
9	TRYPOS	OUT	In case of NOT carousel 5 disc changer, this port is N.C.(output)
	TRYPOS	IN	Carousel 5 Disc Changer only Tray rotate puls input. Capture function can be used.
10	V_SEL1	OUT	For EURO(SCART) connector (BLINKING) signal 'L' : RGB output disable 'H' : RGB output enable
11	RTS	OUT	UART(RS-232C) Request To Send signal output.
12	V_SEL2	OUT	For EURO(SCART) connector V/Y, R/C signal select 'L' : VRGB output = VRGB 'H' : VRGB output = YCGB
13	CTS	IN	UART(RS-232C) Clear To Send signal input.
14	VDD_2V5	–	2.5 V Power supply
15	VSS	–	Ground
16	FE_DATA	IN	Front-End L6315 stream interface. Serial data input.
17	FE_BCLK	IN	Front-End L6315 stream interface. Serial clock input.
18	FE_DVALID	IN	Front-End L6315 stream interface. Data valid flag input.
19	FE_SYNC	IN	Front-End L6315 stream interface. Serial synchronize flag input.
20	FE_EVALID	IN	Front-End L6315 stream interface. If STi5588 then RS-SPLIT error valid flag.
21	FE_ECCBST	IN	Front-End L6315 stream interface. If STi5588 then RS-SPLIT ECC Block Start flag.
22	TP- (VQE_XCS)	OUT	Reserved
23	VDD_RGB	–	RGB circuit 2.5 V Power supply
24	VSS_RGB	–	RGB circuit Ground
25	B_OUT	OUT	B / Cb
26	G_OUT	OUT	G / Y
27	RC_OUT	OUT	R / Cr
28	VREF_RGB	IN	RGB DAC reference
29	IREF_RGB	IN	RGB DAC electric current reference
30	VDD/YCC	–	YC circuit 2.5 V Power supply
31	VSS_YCC	–	YC circuit Ground
32	Y_OUT	OUT	Y
33	C_OUT	OUT	C
34	CV_OUT	OUT	CV
35	VREF_YC	IN	YCC DAC reference

No.	Pin Name	I/O	Pin Function
36	IREF_YC	IN	YCC DAC electric current reference
37	VDD_2V5	–	2.5 V Power supply
38	VSS	–	Ground
39	XAMUTE2	OUT	In case of NOT Karaoke model, this port is N.C.(output). Karaoke model Before MIC mixing stage audio muteing output 'L'.
40	MIC_XON1	OUT	In case of NOT Karaoke model, this port is N.C.(output). Karaoke model MIC mixing chanel control output.
41	MIC_XON2	OUT	In case of NOT Karaoke model, this port is N.C.(output).
		OUT	MIC_ON2 : MIC_ON1 : mode 0 0 : Don't use. 0 1 : Mix to Center Speaker 1 0 : Mix to main L/R channel 1 1 : OFF
42	TP-x	OUT	Reserved
43	CLAMP	OUT	In case of NOT carusel 5 disc changer, this port is N.C.(output)
		IN	Carousel 5 Disc Chenger only. 'H' show disc clampe complete postion.
44	XUNCLAMP	OUT	In case of NOT carusel 5 disc changer, this port is N.C.(output)
		IN	Carousel 5 Disc Chenger only. 'H' show disc un-clampe complete postion.
45	KDSP_RST	OUT	Reserved
46	44X48	OUT	In case of NOT Karaoke model, this port is N.C.(output) Karaoke model KARAOKE-DSP master clock 1/2 mode 'L'.
47	VDD3V3	–	3.3 V Power supply
48	VDD_PCM	–	2.5 V Power supply
49	VSS_PCM	–	Ground
50	VSS	–	Ground
51	A_BCK	OUT	Audio DAC clock
52	A_DATA0	OUT	Audio DAC Front L,R data
53	A_DATA1	OUT	Audio DAC Center, LFE data
54	A_DATA2	OUT	Audio DAC Surround L,R data
55	A_MCLK	OUT	Audio DAC Master clock
56	A_LRCK	OUT	Audio DAC L/R clock
57	DOUT	OUT	S/PDIF(IEC60958) digital audio output.
58	SMI_A4	OUT	SMI SDRAM addresss
59	SMI_A5		
60	SMI_A6		
61	SMI_A7		
62	SMI_A8		
63	SMI_A9		
64	VDD_2V4	–	2.5 V Power supply

A

No.	Pin Name	I/O	Pin Function
65	VSS	–	Ground
66	SMI_A3	OUT	SMI SDRAM address
67	SMI_A2		
68	SMI_A1		
69	SMI_A0		
70	SMI_A10		
71	SMI_A11		
72	SMI_A12		
73	SMI_A13		
74	SMI_CS0	OUT	SMI SDRAM chip select
75	SMI_CS1	OUT	2nd SMI SDRAM chip select
76	SMI_RAS	OUT	SMI SDRAM RAS
77	SMI_CAS	OUT	SMI SDRAM CAS
78	SMI_WE	OUT	SMI SDRAM Write Enable
79	SMI_DQML	OUT	SMI SDRAM Lower DQM
80	SMI_DQMU	OUT	SMI SDRAM Upper DQM
81	VDD_3V3	–	3.3 V Power supply
82	SMI_CLK	IN	SDRAM clock input.
83	VSS	–	Ground
84	SMI_D0	I/O	SMI SDRAM data
85	SMI_D1		
86	SMI_D2		
87	SMI_D3		
88	SMI_D4		
89	SMI_D5		
90	SMI_D6		
91	SMI_D7		
92	SMI_D8		
93	SMI_D9		
94	VDD_2V5	–	2.5 V Power supply
95	SMI_CLK	OUT	SDRAM clock output.
96	VSS	–	Ground
97	SMI_D10	I/O	SMI SDRAM data
98	SMI_D11		
99	SMI_D12		
100	SMI_D13		
101	SMI_D14		
102	SMI_D15		
103	KDSP_XCS	OUT	In case of NOT Karaoke model, this port is N.C.(output). Karaoke model Exteranal DSP chip select 'L'.
104	KDSP_THRU	OUT	In case of NOT Karaoke model, this port is N.C.(output). Karaoke model Exteranal DSP through pass mode 'L'.

F

No.	Pin Name	I/O	Pin Function
105	LFEON	OUT	Reserved for high-quality audio model's LFE control.
106	TP-	OUT	Not use.
107	VDD_3V3	–	3.3 V Power supply
108	VSS	–	Ground
109	TRST		Diagnostic Controle Unit interface
110	TMS		Diagnostic Controle Unit interface
111	TDTO		Diagnostic Controle Unit interface
112	TDTI		Diagnostic Controle Unit interface
113	TCK		Diagnostic Controle Unit interface
114	ROTDRV	OUT	Carousel 5 disc changer model Tray rotation drive PWM output.
115	B_F_ROM	IN	Boot select 'L' : Boot from DCU. 'H' : Boot form ROM.
116	LOAD_DRV	OUT	Tray Open/Close drive PWM output (SINGL & CAROUSEL)
117	CPU_OE	OUT	8M / 16M bits FLASH memory for firmware.
118	CPU_SDCK	OUT	64M bits SDRAM for debugging firmware .
119	VDD_2V5	–	2.5 V Power supply
120	CLK27M	IN	Master 27MHz system clock input.
121	VSS	–	Ground
122	VDD_PLL	–	Clock PLL circuit 2.5 V Power supply
123	VSS_PLL	–	Clock PLL circuit Ground
124	RESET	IN	Power ON system RESET signal 'L' input.
125	DISC_SNS	IN	In case of NOT carusel 5 disc changer, this port is N.C.(input). Carousel 5 disc changer model Disc sense input. Pull up resistor is in another changer board.
126	FP_XRDY	IN	Front Panel interface. Hand-shake(request) input.
127	FE_INT	IN	Front-End L6315 Interrupt request input.
128	SD_DQML	OUT	Flash memory write enable 'L'. Debug SDRAM Lower DQM.
129	SD_DQMU	OUT	Debug SDRAM Upper DQM
130	SD_RXW		Debug SDRAM Read/~Write
131	CPU_WAIT	OUT	CPU wait 'H' input
132	CE3	OUT	Flash memory Chip Eenable 'L'
133	–	OUT	TP-x
134	–	OUT	TP-x
135	SD_XRAS	OUT	Debug SDRAM RAS 'L'
136	VDD_3V3	–	3.3V Vdd
137	VSS	–	GND
138	–	OUT	TP-x
139	SD_XCAS	OUT	Debug SDRAM CAS 'L'
140	SD_XCS	OUT	Debug SDRAM Chip Select 'L'

A

No.	Pin Name	I/O	Pin Function
141	CPU_D0	I/O	FLASH, Debug SDRAM DATA
142	CPU_D1		
143	CPU_D2		
144	CPU_D3		
145	CPU_D4		
146	CPU_D5		
147	CPU_D6		
148	CPU_D7		
149	VDD_2V5	–	2.5 V Power supply
150	VSS	–	Ground
151	CPU_D8	I/O	FLASH, Debug SDRAM DATA
152	CPU_D9		
153	CPU_D10		
154	CPU_D11		
155	CPU_D12		
156	CPU_D13		
157	CPU_D14		
158	CPU_D15		
159	VDD_3V3	–	3.3 V Power supply
160	VSS	–	Ground
161	CPU_A1	OUT	FLASH, Debug SDRAM address
162	CPU_A2		
163	CPU_A3		
164	CPU_A4		
165	CPU_A5		
166	CPU_A6		
167	CPU_A7		
168	CPU_A8		
169	CPU_A9		
170	CPU_A10		
171	VDD_2V5	–	2.5 V Power supply
172	VSS	–	Ground
173	CPU_A11	OUT	FLASH, Debug SDRAM address
174	CPU_A12		
175	CPU_A13		
176	CPU_A14		
177	CPU_A15		
178	CPU_A16		
179	CPU_A17		
180	CPU_A18		
181	CPU_A19		
182	CPU_A20		
183	CPU_A21		
184	VDD_3V3	–	3.3 V Power supply

F

No.	Pin Name	I/O	Pin Function
185	VSS	–	Ground
186	XDRVMUTE	OUT	Motor driver muting signal 'L'.
187	RS_ERROR	IN	Front-End L6315 stream interface. If STi5588 then ECC Error flag.
188	I2C_SEL	OUT	Reserved (Front-End L6315 command interface.) (‘L’ : I2C bus connect to I2C_DMA) (‘H’ : I2C bus connect to I2C_COMAND)
189	DAC_SCK	OUT	Audio DAC serial control clock output.
190	DAC_SO	OUT	Audio DAC serial control data output.
191	DAC_XCS0	OUT	Audio DAC serial control chip select output.
192	DAC_XCS1	OUT	Reserved (Audio DAC serial control chip select output. For addition DAC)
193	6CH_MODE	OUT	In case of NOT 6ch audio output model, this port is N.C.(output). 6ch audio output model Audio quality up control signal output.
194	SDA	SDA	Front-End L6315 command interfase I2C bus serial data line.
195	SCL	SCL	Front-End L6315 command interfase I2C bus serial clock line.
196	FE_RST	OUT	Front-End L6315 Hard reset output.
197	TXD	TXD	UART(RS-232C) data output
198	VDD_2V5		2.5 V Power supply
199	VSS	IN	Ground
200	RXD	RXD	UART(RS-232C) data input
201	TP-x	OUT	Reserved
202	TRIGIN	–	Diagnostic Controle Unit interface
203	TRIGOUT	–	Diagnostic Controle Unit interface
204	OPEN	IN	'H' show tray loading "OPEN" complete position.
205	XCLOSE	IN	'H' show tray loading "CLOSE" complete position.
206	FP_ACK	OUT	Front Panel interface. Hand-shake (acknowledge) output.
207	FP_SCK	OUT	Front Panel interface. (Soft) Serial transfer clock output.
208	FP_SI	IN	Front Panel interface. (Soft) Serial transfer data input.

PCM1742KE (DVD IF ASSY : IC1921)

• D/A Converter

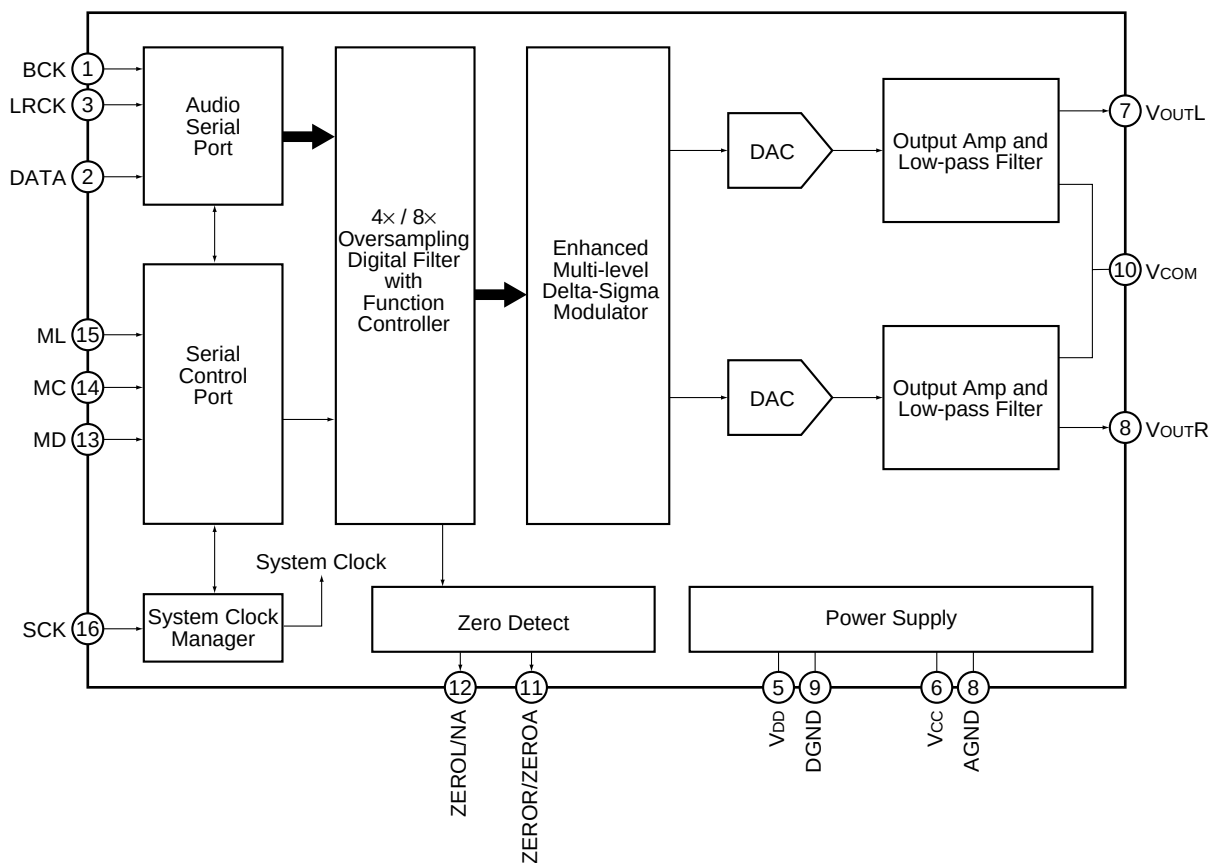
● Pin Arrangement



● Pin Function

No.	Pin Name	I/O	Pin Function
1	BCK	I	Audio data bit clock input
2	DATA	I	Audio data digital input
3	LRCK	I	L-channel and R-channel Audio data latch enable input
4	DGND	–	Digital ground
5	VDD	–	Digital power supply +3.3V
6	VCC	–	Analog power supply +5V
7	VOUTL	O	Analog output for L-channel
8	VOUTR	O	Analog output for R-channel
9	AGND	–	Analog ground
10	VCOM	–	Common voltage decoupling
11	ZEROR/ZEROA	O	Zero flag output for R-channel / Zero flag output for L/R-channel
12	ZEROL/NA	O	Zero flag output for L-channel / No assign
13	MD	I	Mode control data input
14	MC	I	Mode control clock input
15	ML	I	Mode control latch input
16	SCK	I	System clock input

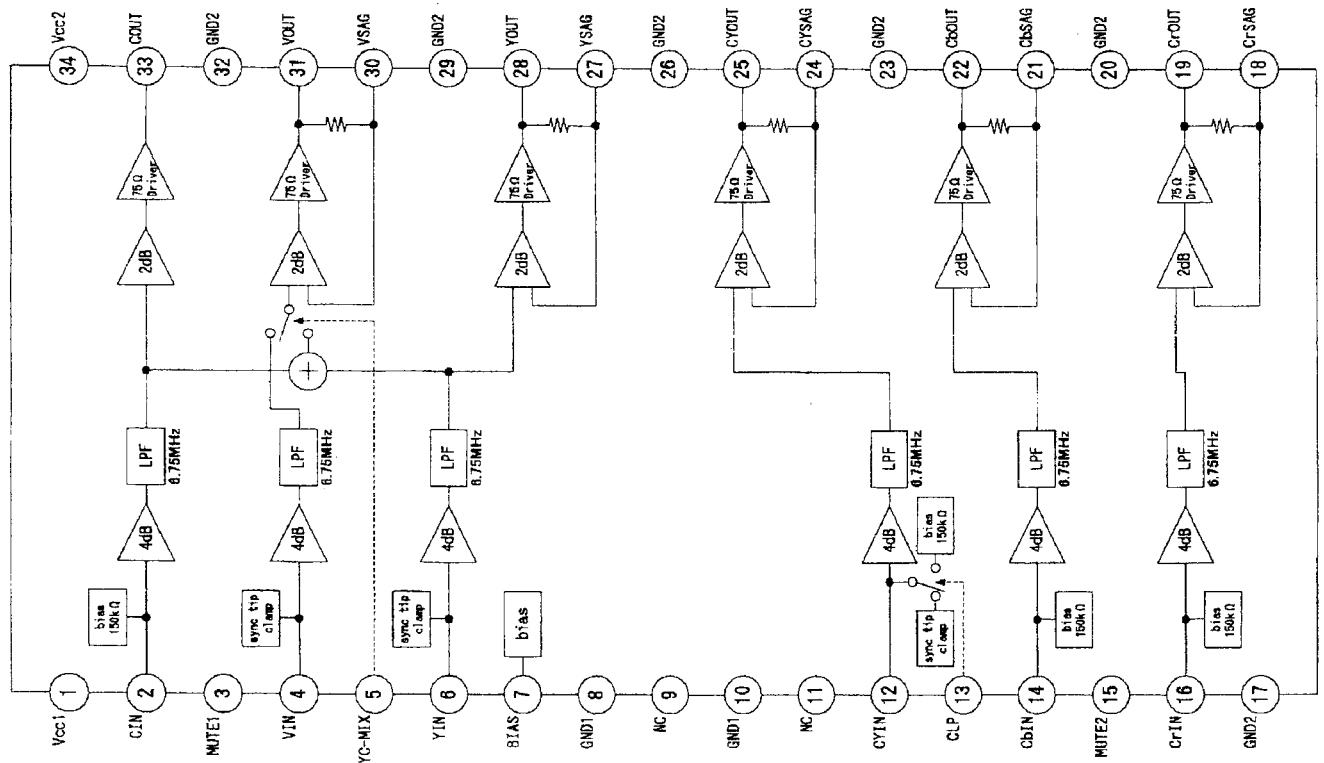
● Block Diagram



MM1567AJ (DVD IF ASSY : IC1941)

• DVD Video Amp. IC

● Block Diagram



● Pin Function

No.	Pin Name	Pin Function	No.	Pin Name	Pin Function
1	VCC1	VCC	18	CrOUT	Signal output (Cr)
2	CIN	Crrroma input	19	CrSAG	SAG correction (Cr)
3	MUTE1	Mute select	20	GND2	GND
4	VIN	Video input	21	CbOUT	Signal output (Cb)
5	YC MIX	YC MIX select	22	CbSAG	SAG correction (Cb)
6	YIN	Video input (Y)	23	GND2	GND
7	BIAS	Bias	24	CYOUT	Signal output (CY)
8	GND1	GND	25	CYSAG	SAG correction (CY)
9	NC	NC	26	GND2	GND
10	GND1	GND	27	YOUT	Signal output (Y)
11	NC	NC	28	YSAG	SAG correction (Y)
12	CYIN	Luminance input	29	GND2	GND
13	CLP	Input clamp select	30	VOUT	Signal output (V)
14	CbIN	Component input (Cb)	31	VSAG	SAG correction (V)
15	MUTE2	Mute select	32	GND2	GND
16	CrIN	Component input (Cr)	33	COUT	Crrroma output
17	GND2	GND	34	VCC2	VCC

7.3 CLEANING



A

Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools:

Position to be cleaned	Cleaning tools
Pickup leneses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

B

C

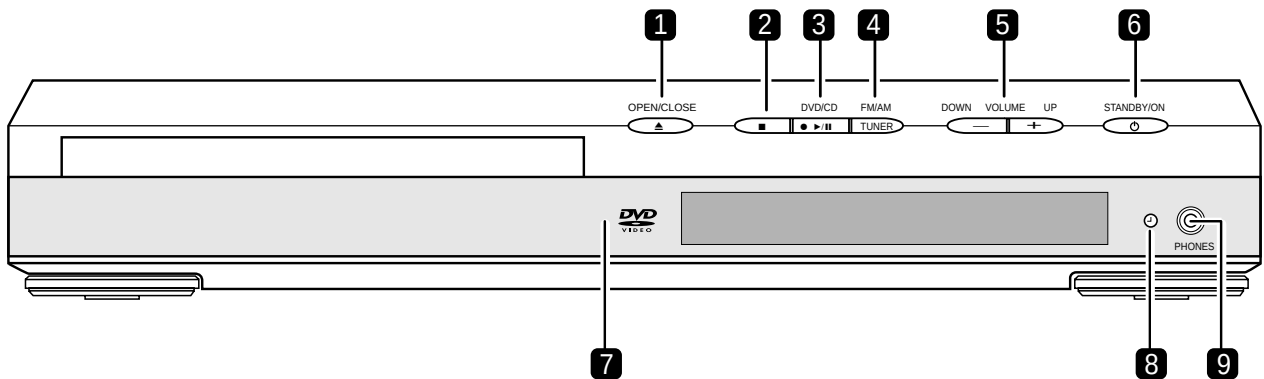
D

E

F

8. PANEL FACILITIES

FRONT PANEL



1 OPEN/CLOSE

Opens the disc tray

2 ■

Stops playback

3 DVD/CD / ►/II

Switches to the DVD/CD function and starts/pauses/resumes playback

4 FM/AM (TUNER)

Switches to the tuner function and toggles between the AM and FM bands

5 VOLUME buttons

Adjusts the volume

6 STANDBY/ON button

Switches the player on or into standby

7 Remote sensor

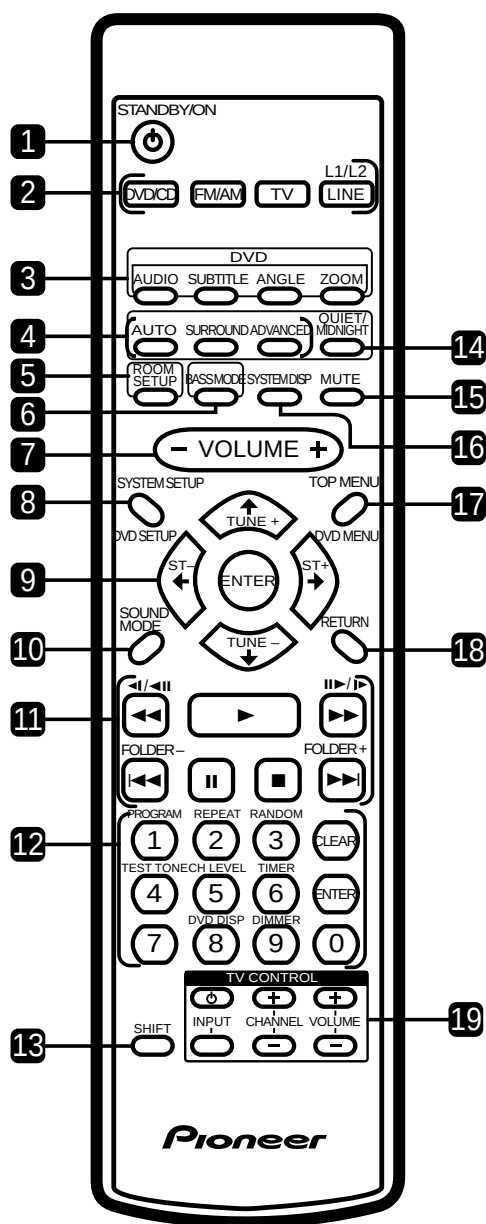
8 Timer indicator

Lights when the timer is set

9 PHONES jack

Headphone jack

REMOTE CONTROL



1 **STANDBY/ON**

Switches the player on or into standby

2 **Function select buttons**

Selects the source you want to listen to

3 **DVD buttons**

AUDIO

Selects the audio channel or language

SUBTITLE

Selects a subtitle display

ANGLE

Changes the camera angle during DVD multi-angle scene playback

ZOOM

Changes the zoom level

4 **Sound mode buttons**

AUTO

Automatically selects a decoding format depending on the source

SURROUND

Selects a surround mode

ADVANCED

Selects a DSP mode

5 **ROOM SETUP**

Press to automatically adjust the surround sound settings according to your room type (S, M, or L)

6 **BASS MODE**

Press to bring up the low end for certain kinds of music or sound sources

7 **VOLUME**

Adjusts the volume

8 **DVD SETUP**

Displays (or exits) the on-screen DVD display

SYSTEM SETUP (SHIFT+DVDSETUP)

Press to make various system settings in standby; choose your surround sound settings when the unit is switched on

9 ENTER, TUNE & cursor control buttons

Navigates on-screen displays and menus; **ENTER** selects an option or executes a command

10 SOUND MODE

Adjusts the tone and effect level

11 Playback controls

▶
Starts/resumes playback

◀◀ and ◀|/◀||
Use for reverse slow motion playback, frame reverse and reverse scanning

▶▶ and ||▶/▶▶
Use for forward slow motion playback, frame advance and forward scanning

◀◀◀ / FOLDER -
Jumps to the beginning of the current chapter/track (or folder by pressing **SHIFT** + ◀◀◀), then to previous chapters/tracks/folders

▶▶▶ / FOLDER +
Jumps to the next chapter/track (or folder by pressing **SHIFT** + ▶▶▶)

||
Pauses playback; press again to restart

■
Stops playback

12 Number buttons and SHIFT functions

The number buttons can be used for selecting tracks directly, the functions above the buttons are accessed by pressing **SHIFT** at the same time as the button.

PROGRAM
Use to program/play a program list

REPEAT
Selects a repeat play mode

RANDOM
Selects a random play mode

TEST TONE
Outputs the test tone (for speaker setup)

CH LEVEL

Press to adjust the speaker level

TIMER

Selects the timer menu

DVD DISP

Changes the displayed information on the display

DIMMER

Makes the fluorescent display (FL) dimmer or brighter

CLEAR

Clears an entry

ENTER

Selects menu options, etc. (works exactly the same as the **ENTER** button in 9 above)

13 SHIFT

Press to access the functions/commands written in green on the remote

14 QUIET/MIDNIGHT

Adjusts the sound for low listening levels

15 MUTE

Mutes the volume

16 SYSTEM DISP

Switches between information and clock displays

17 DVD MENU

Displays the DVD menu (for CDs, Video CDs and MP3 discs, the Disc Navigator screen appears)

TOP MENU (SHIFT + DVD MENU)

Displays the top menu of a DVD disc

18 RETURN

Press to return to a previous menu screen

19 TV CONTROL

⏻
Switches the TV on or into standby

INPUT SELECT

Switches the TV input

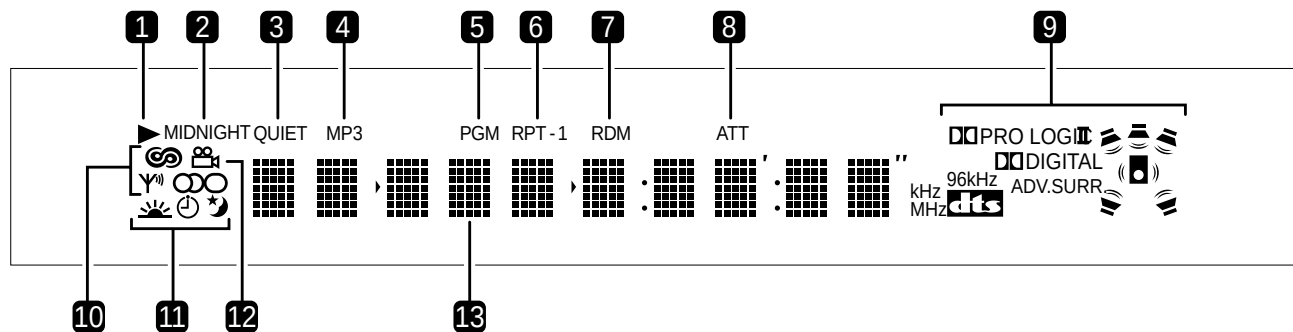
CHANNEL +/-

Selects channels on the TV

VOLUME +/-

Adjusts the volume on the TV

REMOTE CONTROL



1

Lights during playback of a CD, VCD, DVD or MP3

2 **MIDNIGHT**

Lights during Midnight listening

3 **QUIET**

Lights when the Quiet mode is switched on

4 **MP3**

Lights during playback of an MP3 disc

5 **PGM**

Lights during program play

6 **RPT-1**

RPT lights during repeat play (**RPT-1** lights during repeat one-track play)

7 **RDM**

Lights during random playback

8 **ATT**

Lights when you attenuate (reduce) the line signal level (can only be used with an analog signal)

9 **Surround sound indicators**

PRO LOGIC II

This lights to indicate Dolby Prologic II decoding

DIGITAL

This lights to indicate decoding of a Dolby Digital*1 signal

96kHz

Lights when a 96kHz source is detected (won't light if the source is copy-protected)

ADV. SURR

Lights when one of the Advanced Surround listening modes is selected

DTS

This lights to indicate decoding of a DTS*2 signal

Speaker indicators

These indicate either stereo () or multi-channel (all speakers light in the display) listening



Note

Even when all indicators are lit, you may not hear sound from all the speakers in your setup.

10 **Tuner indicators**



European model only

Lights when in one of the RDS display or search modes



Lights when a broadcast is being received



Lights when a stereo FM broadcast is being received in auto stereo mode



Lights when FM mono reception is selected

11 **Timer indicators**



Lights when the wake-up timer is active



Lights when the timer is set



Lights when the sleep timer is active

12

Lights during multi-angle scenes on a DVD disc

13 **Character display**

*1 Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

*2 "DTS" and "DTS Digital Surround" are registered trademarks of Digital Theater Systems, Inc.